

**JOINT FORCES STAFF COLLEGE
JOINT ADVANCED WARFIGHTING SCHOOL**

The Evolution of the Joint ATO Cycle

by

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A paper submitted to the Faculty of the Joint Advanced Warfighting School in partial satisfaction of the requirements of a Master of Science Degree in Joint Campaign Planning and Strategy.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Joint Forces Staff College or the Department of Defense.

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Classified Documents Disclaimer

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Acronym List

(C/J)AOC	(Combined/Joint) Air Operations Center
ABCCC	Airborne Battlefield Command and Control Center
ACCE	Air Component Coordinating Element
ACE	Air Command Element
ACO	Air Control Order
ACP	Air Control Plan
AEF	Air Expeditionary Force
AEW	Air Expeditionary Wing
AFM	Air Force Manual
ALO	Air Liaison Officer
AOD	Air Operations Directive
AOR	Area of Responsibility
ASOC	Air Support Operations Center
ASR	Air Support Request
ATO	Air Tasking Order
AWACS	Airborne Warning and Control System
BAI	Battlefield Air Interdiction
BCD	Battlefield Coordination Detachment
BCL	Battlefield Coordination Line
BDA	Battle Damage Assessment
C/JFACC	Combined/Joint Forces Air Component Commander
C/JFLCC	Combined/Joint Forces Land Component Commander
C/JFMCC	Combined/Joint Forces Maritime Component Commander
C/JFSOCC	Combined/Joint Special Operations Component Commander
C2	Command and Control
CAS	Close Air Support
CATO	Combined Arms Tasking Order
CENTAF	Central Command Air Forces
CENTCOM	Central Command
CFC	Combined Forces Commander
CIA	Central Intelligence Agency
CINC	Commander in Chief
CINCPAC	Commander in Chief Pacific Air Forces
COA	Course of Action
COCOM	Combatant Command Authority
COMMACV	Commander, Military Assistance Command - Vietnam

CRC	Control and Reporting Center
CTAPS	Contingency Theater Air Planning System
DAOC	Distributed Air Operations Center
DASC	Direct Air Support Center
DASC-A	Airborne Direct Air Support Center
DEAD	Destruction of Enemy Air Defenses
DMPI	Desired Mean Point of Impact
DT	Dynamic Targeting
ETAC	Enlisted Tactical Air Controller
EUCOM	European Command
F2T2EA	Find, Fix, Target, Track, Engage, and Assess
FAC	Forward Air Controller
FAC-A	Airborne Forward Air Controller
FEAF	Far East Air Force
FM	Field Manual
FRAGO	Fragmentary Order
FSCL	Fire Support Coordination Line
GAT	Guidance, Apportionment, and Targeting
GPS	Global Positioning System
GWOT	Global War on Terror
HARM	High-speed Anti-Radiation Missile
HUMINT	Human Intelligence
IADS	Integrated Air Defense System
ITO	Integrated Tasking Order
JAC	Joint Analysis Center
JAOP	Joint Air Operations Plan
JCS	Joint Chief of Staff
JDAM	Joint Directed Attack Munitions
JFC	Joint Forces Commander
JGAT	Joint Guidance Apportionment and Targeting
JIPTL	Joint Integrated Prioritized Targeting List
JP	Joint Publication
JTAC	Joint Tactical Air Controller
JTCB	Joint Targeting Coordination Board
KEZ	Kosovo Engagement Zone
KI	Kill Box Interdiction
KI/CAS	Kill Box Interdiction/Close Air Support
KLA	Kosovo Liberation Army
LGB	Laser Guided Bomb

MAAP	Master Air Attack Plan
MAP	Master Attack Plan
MARLO	Marine Liaison Officer
MAW	Marine Aircraft Wing
MDMP	Military Decision Making Process
MEF	Marine Expeditionary Force
MPC	Mission Planning Cell
MTW	Major Theater War
NALE	Naval Liaison Element
NATO	North American Treaty Organization
NFZ	No-Fly Zone
NSC	National Security Council
OAF	Operation Allied Force
ODA	Operational Detachment Alpha
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OODA	Observe-Orient-Decide-Act
OPCON	Operational Control
OPTASKLINK	Operational Task Link
OTIS	Operation and Tactics Integration Suite
PACAF	Pacific Air Forces
PACOM	Pacific Command
PGM	Precision Guided Munitions
PSAB	Prince Sultan Air Base
RAF	Royal Air Force
RMA	Revolution in Military Affairs
ROE	Rules of Engagement
SAC	Strategic Air Command
SAM	Surface-to-Air Missile
SCAR	Strike Coordination and Reconnaissance
SCIF	Secret Compartmented Information Facility
SEAD	Suppression of Enemy Air Defenses
SEATO	South East Asia Treaty Organization
SIOP	Single Integrated Operations Plan
SOLE	Special Operations Liaison Element
SOTAC	Special Operations Tactical Air Controller
SPINS	Special Instructions
TAC	Tactical Air Command
TACC	Tactical Air Control Center

TACON	Tactical Control
TACP	Tactical Air Control Party
TACS	Theater Air Control System
TAGS	Theater Air-Ground System
TST	Time Sensitive Targeting
USAF	U.S. Air Force
WMD	Weapons of Mass Destruction
WOC	Wing Operations Center

“It is a disgrace that modern air forces are still shackled to a planning and execution cycle that lasts three days. We have hitched our jets to a hot air balloon. Even when this lackluster C2 system works properly, we are bound to forfeit much of the combat edge we know accrues to airpower because of its flexibility and speed of response.”¹ – Chief of Staff of the Air Force, 1990

Hypothesis

Background: airpower has revolutionized warfare. History has seen the use of aircraft during war evolve from simple, single engine biplanes employing pilots personal side arms in WWI to present day aircraft that are capable of flying to any area in the world and hitting a target with pinpoint accuracy. Although airpower advocates like Douhet and Mitchell would see this revolution as a vindication for their vision of the use of air, the processes to command and control air in order to achieve specific goals has not evolved at the pace of the aircraft. The quote above shows that some of the most senior ranking leaders in the Air Force recognize this fact.

Centralized control and decentralized execution has been the mantra of airpower and the Joint Forces Air Component Commander (JFACC) (or his predecessors) for over 50 years. A manifestation of that mantra is the Air Tasking Order (ATO) and the cycle that produces it. Currently, this planning cycle takes 72 hours based on assumptions and “perceived” requirements of the land component and the Joint Forces Commander (JFC). The JFACC and his staff have accepted this cycle without any serious or critical evaluation. It has failed to evolve in relation to the doctrine of the Army and JFC as well as technological advances in airpower and command and control. Rather than change the construct, the process has created niche missions such as Time Sensitive Targeting in order to circumvent the latency of the process. This ATO cycle still lacks the planning flexibility required by both the JFC and the JFACC in the non-linear battle space of

today. A new roadmap to coordinate and synchronize, synthesize, and integrate joint fires and provide air support must be devised.

Following the last four conflicts, Desert Storm through Iraqi Freedom, senior leaders from the Air Force and other Services (most outspoken of all was the Army) have lamented on the length of time it takes from target nomination to destruction. Although there is much “weeping and gnashing of teeth” about the ATO cycle, the time frame associated with this cycle is never questioned. In fact, there have been apologetics publications written in an attempt to rationalize the ingrained construct². The ATO cycle has become part of the very fabric of the doctrine of airpower, incorporated in all joint and Service doctrine as well as tactical manuals. This 72 hour planning cycle is too time consuming to allow the needed responsiveness in this age of “non linear battlespace” and maneuver based warfare. The current process must change.

Thesis: The 72 hour ATO cycle has become a relic of the Cold War and does not capitalize on the flexibility of airpower. There must be an in depth analysis and subsequent evolution of the cycle to match the changes in Joint military doctrine since the development of the AirLand battle doctrine by the U.S. Army. It should be noted that rather than continuing with the evolution of the process, doctrine has created new roles and missions, such as Time Sensitive Targeting to circumvent the entrenched process of the Air Tasking Cycle. The time has come to critically analyze the entire process from air apportionment to execution and restructure. This should be done in the same way that command and control was restructured for the AirLand battle.

Analysis Method: In order to analyze the evolution of the cycle, this paper evaluated prime sources, conducted a literature search and evaluation of other historical

examinations. Finally, the author synthesized and critically evaluated alternative methods to control and integrate joint air operations. This exploration is presented via a historical look at the control of air capabilities to meet a specific objective; that is how airpower effected strategy and assisted in the Theater campaigns. This is not an assault on the relevance of airpower. On the contrary, it will be shown that the U.S. Air Force developed a superb process to meet the Joint Forces Commander's (or his predecessors) objectives and achieve victory using the doctrine of AirLand Battle. The entire command and control architecture, including the ATO Cycle, was designed to meet the operational needs of the combatant commander and to achieve the political effects desired by the U.S. Air Force.

It appears that, when Germany determined to go into Norway, the staff of the supreme command determined what proportion of air, ground, and naval elements would comprise this expeditionary force. It then designated a commander and thereafter there was complete unity of command, and no interference from the three arms of the service thus combined. Here is a lesson which we must study well. —General “Hap” Arnold

“Joint warfare is team warfare. The engagement of forces is not a series of individual performances linked by a common theme; rather, it is the integrated and synchronized application of all appropriate capabilities. The synergy that results from the operations of joint forces according to joint doctrine maximizes combat capability in unified action. Joint warfare does not require that all forces participate in a particular operation merely because they are available. The joint force commander has the authority and responsibility to tailor forces for the mission at hand, selecting those that most effectively and efficiently ensure success.” - JP 1, Joint Warfare of the Armed Forces of the United States

Historical Look

Although the history of airpower is relatively short, the idea of centralized command and control has been ingrained in doctrine since the beginning. It is useful to look at the “dawn” of the strategic use of air to meet an objective³. Three questions must be answered. First, is the Air Tasking Order a beneficial and value added tool? Second, is the process to create the ATO based on the right assumptions? Third, is the process as efficient as it needs to be? While the ATO is joint doctrine, it evolved from U.S. Air Force doctrine and so, in our historical investigation it is prudent to explore Air Force history to ascertain the beginnings of the command and control of airpower. Concurrently, it is crucial to fully investigate this process from an objective, joint, non-parochial, point of view, not relying on only one service and incorporating and evaluating alternate methods for command and control.

World War 2

The model for designating a single commander for all theater air assets was developed based on the United States’ failures during Operation Torch in North Africa in

1943. As the first Operation involving U.S. forces in WWII, the command structure of the American military was not battle tested and was still in its infancy. Air forces were divided between support of ground forces and strategic Bomber and Fighter commands. The bombers and fighters were controlled by and under completely separate command structures than the ground support aircraft that were divided/parceled out to the different task force commanders⁴. With this parceling of the American air effort, U.S. commanders were unable to gain the initiative and mass their forces against a significantly outnumbered German air force. Ground commanders were unwilling to give up their organic airpower and had no way of diverting air forces to achieve a common objective. Even the British military genius General Montgomery recognized the need for a theater unity of effort with air forces when he wrote:

It follows that the control of the available airpower must be centralized, and command must be exercised through R.A.F. channels. Nothing could be more fatal to successful results than to dissipate the air resources into small packets placed under the command of army formation commanders, with each packet working on its own plan. The soldier must not expect, or wish, to exercise direct command over air striking forces⁵.

It became clear that in order to effectively utilize air assets, air forces needed to be disassociated with the ground Commanders. The argument stemmed from the ability of airpower to strike targets well beyond the artificial geographical boundaries used by ground commanders. There was an additional, underlying sentiment that must be discussed and taken into account. The proponents of a separate and distinct air service were shaping the discussion and lessons learned to meet an additional strategic goal of autonomy and eventually parity⁶. This goal was eventually realized at least partially, with the creation of the Air Force in 1947. The model of a centralized commander for air met both of these objectives.

Prior to the war, each of the Services had separate view of the command of airpower. The Army felt the air supported ground operations and so the ground commander should maintain command over it. The Navy felt air should be commanded by the fleet commander and be utilized for naval operations. A dissenting opinion came from the Marine Corps; the Corps wanted its own air arm. This view became even more relevant and emotional following Guadalcanal. There, after putting the Marines ashore, the Navy pulled its carriers out (to meet naval operational goals) and left the Marines without air cover for two weeks⁷.

The debate effectively ended after the 1943 Casablanca Conference when President Franklin Roosevelt and Britain's Prime Minister Churchill established that an airman would "centrally control" all airpower⁸ and was shortly thereafter codified in Army Doctrine. Army Field Manual 100-20 stated, "Control of available airpower must be centralized and command must be exercised through the air force commander if this inherent flexibility and ability to deliver a decisive blow are to be fully exploited."⁹ In the European theater, General Eisenhower designated General Spaatz as the U.S. single air commander¹⁰. A board composed of British and American officers chose targets to strike¹¹. In the Pacific theater, General MacArthur chose General Kenney and put Navy, Army Air Corps and Marine air under a single commander¹². It is from these lessons of history that the doctrine of centralized control was born and the argument for and against integration began. The underlying argument hinges on the requirement for unity of effort by all forces to meet specific objectives set by the commander. It would be many years before this concept would be achieved again. For the next 20 years, commanders would

concern themselves with the deconfliction of forces rather than integrating forces to gain efficiencies and improve effectiveness.

Korea

In Korea, the lessons of North Africa and the rest of World War II that created a single theater air commander were not applied. Of note, this was the first time since the creation of the Air Force as a separate service that the U.S. had gone to war. The National Security Act of 1947 that created the Air Force and the subsequent Key West Agreement of 1948 had attempted to establish the roles of the Services' air components¹³. The agreement of 1948 stated the naval air was "to conduct air operations as necessary for the accomplishment of objectives in a naval campaign," the Marine Corps kept its aviation arm to support amphibious landings and the Air Force retained responsibility for strategic air warfare, close air support for the Army, and air superiority¹⁴. Arguably, since there was no surface naval campaign in Korea and with the exception of the Inchon landing, no amphibious assaults, it should have been clear to the Services who should have been responsible for execution of the air war.

General Stratmeyer was appointed the Far East Air Force (FEAF) Commander and as such should have had, in accordance with the Key West Agreement and doctrine at the time, operational control of Naval and Marine aviation. This however proved not to be the case. Instead, individual Services kept control of their organic airpower and chose to geographically divide the theater until very late in the war. This practice of geographic deconfliction has been the historical choice when less than a full effort (Major Theater War) was required. The idea of centralized control of the air campaign with one Commander synchronizing the efforts was put aside for political and practical reasons.

General MacArthur as the Commander in Chief, United Nations Forces, created a General Headquarters Targeting Group responsible for the selection of targets in order to meet the CINCs strategic objectives¹⁵. This group initially was composed of only MacArthur's staff and did not have the manpower or expertise required to select targets for air strikes.¹⁶ It would eventually be comprised of senior representatives of both the Air Force and Naval aviation staffs.¹⁷ Although the targets were chosen in a joint manner, the resourcing of assets to strike the targets was a separate matter. The Navy, with its Task Force-77, requested all of its targets be on the east coast of Korea. It opposed giving up operational control over its forces to another service even if that meant a more synergistic effect. The Air Force argued the effective North Korean centers of gravity, rail yards and Pyongyang, lay in the center and west portions of the country, and it was in those centers of gravity the preponderance of force should be used. The Marine Corps also resisted giving up operational control in accordance with the Key West Agreement. They insisted on Marine air only to be used in direct support of Marine ground forces.¹⁸ The FEAF agreed that Marine air should support Marine ground forces in amphibious landing operations, but when and if Marine air was used to support sustained combat on land, the FEAF should have operational control.

It was not until 1952 that the Navy, somewhat begrudgingly, adopted the control procedures of the FEAF and the Marines were integrated with the overall air operations¹⁹. Again, service parochialism and preferences based on history, like the Marines being marooned at Guadalcanal, caused a significant gap in unity of effort until late in the conflict. Even with Key West agreements in place prior to hostilities, no service wanted to give up its operational control to another service. Eventually though, common sense

prevailed and each service compromised to meet the campaign objectives of General MacArthur. A general from one of the coalition partners, Britain, commented that the history of U.S. air efforts in Korea read more like “a summary of treaty negotiation between uneasy allies than a joint campaign record of sister Services facing a common enemy.”²⁰

Two lessons for the Services would linger after the Korean War. First, the Navy could keep operational control over its air assets and make a valuable contribution to the Joint Forces Commander. Second, if a Marine does not control Marine air, Close Air Support (CAS) for the Marine forces would not get the same priority from the FEAF that it would enjoy if Marine air was used solely for the Marine Corps. Although one cannot dispute the fact that if the Marine Corps used all of its air to support CAS, there would be more aircraft flying CAS sorties, it is certainly circular logic and does not provide for the efficient allocation and integration of joint fires.

Vietnam

Vietnam saw a complete unraveling of the lessons of World War II and even failed to produce the unity of effort eventually gained in Korea. Rather than have a single air commander, the command lines were purposely fragmented. Even more important, though was the lack of a coherent, integrated and synchronized plan for the use of airpower. From 1961 to 1964, the conflict in Vietnam continued to “gradually escalate” and the command and control of airpower evolved to match the increasing size of theater operations. By 1965 and the start of Operation Rolling Thunder five distinct air forces existed. They were Naval, Air Force fighters, Marine, Air Force bombers and the Vietnamese Air Force. Each had different chains of command and each service kept

control of its own air. The Navy, under Commander in Chief Pacific (CINCPAC) had operational control of Naval fires (primarily carrier based air) called, again, Task Force 77. Marine air was in direct support of tactical operations as designated by the Marine ground commander²¹. Even the Air Force, the banner carrier for centralized control had two separate command lines. The fighters fell under 2nd Air Division which was redesignated 7th Air Force in 1966, and reported to Pacific Air Forces. The bombers remained under Strategic Air Command, an entirely separate Command, for the duration of the war.

Compounding the different chains of command were the different roles each “air force” played in the conflict. It would seem reasonable to assume that the Commander of forces in Vietnam (Commander Military Assistance Command – Vietnam (COMMACV)) was actually responsible for assembling a strategy and executing all elements of military power. In fact, General Westmoreland was designated a unified commander and under the joint doctrine at the time, that designation should have enabled COMMACV to prescribe a strategy and command and organize forces to implement the strategy.²² Instead, Westmoreland’s, and later Gen. Creighton Abrams’s, span of control was limited to South Vietnam. The Commander of Pacific Command (CINCPAC), Admiral Sharp, stated that although he left the ground war in Vietnam in the “capable hands” of Westmoreland, the “air war over North Vietnam was under my close personal direction.”²³ He goes on to describe how the Vietnam War was a “near-flagrant misuse of airpower”. Admiral Sharp asserts it was the “decision makers” – that is the National Command Authority that failed to adequately integrate and synchronize the air efforts with an overall strategy²⁴.

Although his assessment is correct, a quick glance in Admiral Sharp's own mirror may have illuminated another culpable individual. As the overall Air Commander, CINCPAC ultimately designated the Air Force (PACAF) as the "coordinating authority" beginning in 1965 with Rolling Thunder, but stated the Air Force had no operational control of carrier forces²⁵. The resultant compromise was a dividing of North Vietnam into geographical sections called Route Packages (after the reconnaissance routes tasked to fly in them during Rolling Thunder) to deconflict airpower, rather than integrate it.²⁶ The country was divided into six Route Packages (see figure 1), called "routepacs", and each was then assigned to either the Air Force or the Navy for operations and command and control. Admiral Sharp as CINCPAC would then allocate Joint Chiefs of Staff



Figure 1 - Route Packages²⁷

approved targets based on these route-packs. This geographical deconcentration of airpower, like in Korea proved to be very inefficient and its lessons validate Admiral Sharp's view of the "near-flagrant misuse of airpower".

The air war in the North was dysfunctional at best, and lacked any coherent strategy. The effort in the North was under the direction and close scrutiny of Secretary of Defense Robert McNamara and the President, while efforts in the south were flown in support of the land effort based on the ground commander's requirements. There were some operations in the air effort that resembled a traditional interdiction campaign, Rolling Thunder, Linebacker I and II for example. These operations, though successful in their limited scope, were used by McNamara for political statements rather than to achieve a specific effect²⁸. The starting and "pausing" of bombing operations became the *modus operandi* during the conflict.

In addition to the poor command relationships, a lack of unity of effort, and a complete lack of a strategy already discussed, simple tasks such as choosing which targets to hit were relegated to units far away from the battlefield. The "strategic" targets were chosen by a very slow and convoluted process that was totally detached from the strategy of the commander. The process was comprised of target nominations from PACOM that were sent to the Joint Chiefs of Staff for approval or changes and ended up at the White House for President Johnson and Secretary McNamara to approve (or change) during the "Tuesday Lunch Group".²⁹ This was more reminiscent of the strategic nuclear targeting process than a conventional bombing campaign.

For operations in South Vietnam, airpower was primarily used in a supporting role to the army. The command and control system was built to support COMMACV's

requests for air support. It is important to note that the only ability COMMACV had to influence the battlefield with airpower was Close Air Support (CAS) since he did not have any air assets apportioned to him. The heart of this system was the Seventh Air Force tactical air control center (TACC) at Tan Son Nhut Air base³⁰. The TACC, slow at first, evolved into a highly responsive command center for CAS. In fact, by 1967, General Westmoreland described close air support as “the finest any Army could hope to get”.³¹ With the evolution of the TACC, Marine air was ultimately put under the operational control of Seventh Air Force in 1968³². This success was in stark contrast to the frustration of the interdiction campaign in the North.

It is here we begin to see the growth of the Command and Control system that is still with us today. Labeled “tactical” missions, the sorties flown in support of the ground commander were very effective and flexible. Upon takeoff, these missions would contact the Airborne Command and Control Center (ABCCC) to be directed to missions in South Vietnam in support of ground troops via a Forward Air Controller (FAC) or to a target that the TACC had designated “perishable”³³. Here we see the first examples of what we now refer to as time sensitive targets. These missions were not preplanned, and most were flown by aircraft that had been sitting alert or diverted from a preplanned strike in the south.³⁴ This type of mission structure was integrated into the evolution of the command and control system and specifically in the TACC.

The TACC came out of Vietnam as a schizophrenic system. It was divided between preplanned targets designated well in advance by higher authority and immediate targets in support of ground operations labeled CAS. This division inside the system is important, as it is the embryonic beginnings of the current Air Tasking Cycle.

Lessons Learned through Vietnam

Before continuing in our historical investigation, it is useful to review the lessons for airpower that are becoming clear. First and most important is the absolute necessity for the entire air effort to support the strategy of the overall combatant commander. Today this would be the designated Joint Forces Commander. This unity of effort is absolutely paramount and without it, the success of the operation is put in jeopardy. We saw this at the beginning of World War II in North Africa, Korea and most egregiously in Vietnam.

Of utmost importance to unity of effort is for some entity to be in charge of developing the plan to support the overall strategy. There is always more than one way to “skin a cat”, and there will always be discourse and probably some alternative views as to the optimum way to obtain the goals of the strategy. Disagreement has its place in any organization; whether by convincing others of the viability of a specific course of action or by combining the best ideas from others, the end result could be a better plan. Joint Pub 3-30 refers to the overarching air effort plan as the Joint Air Operations Plan or JAOP. Whether by direction or consensus, eventually there needs to be an overarching plan on how to achieve the results specified by the overall commander. In a hierarchical organization like the military, there needs to be one person ultimately responsible to the overall commander for this plan and he must be subordinate to the commander in order to achieve and maximize the synergetic effects airpower can bring to the fight. Common sense dictates he should be an expert on the capabilities and limitations of air operations, but it matters little what service this person comes from. In any case, he needs to be in charge of developing, approving and adjusting the JAOP.

The Air Tasking Order is the means by which the “guy in charge” of the JAOP communicates and executes his plan. If we need a coherent plan, we also need to communicate and execute the plan; this is the purpose of the ATO. The format of the order is irrelevant at this point. Appendix A of this paper contains examples of different formats of the ATO, called Fragmentary orders or “FRAGOs” up until this point in history. At this point, it is sufficient to understand that the Air Tasking Order is simply a mechanism. Later, an in depth review of the ATO will allow us to ascertain what form the tasking order should take.

Recalling the question first posed by the author, “Is the Air Tasking Order a beneficial and value added tool? Based on history’s evidence of successes and failures, the answer is a resounding, yes. The other two questions posed, “Is the process to create the ATO based on correct assumptions and is the process as efficient as it needs to be?” require more study. To answer these we must look to the post Vietnam era and the evolution of the modern ATO process.

AirLand Battle

Following Vietnam, the military turned its sights back to the Soviet Union and the Cold War. Training and defense acquisitions focused on fighting both a nuclear and conventional war against the forces of the U.S.S.R. The Single Integrated Operation Plan (SIOP) combined Strategic Nuclear forces of the Air Force (bombers and missiles from Strategic Air Command (SAC)) and the Navy (missiles launched from nuclear submarines). In the area of conventional war, the Army and the Air Force trained for a combined arms fight against the Soviets in Europe. The Navy focused on the defeat of

the Soviet Fleet and global presence, while the Marine Corps continued training for amphibious operations using combined arms.³⁵

In 1973, Secretary of Defense Schlesinger demanded the military “achieve a greater degree of force interdependence”³⁶. To this end, there were agreements between the Air Force and Navy on the use of bombers for aerial mining and surveillance, and between the Army and Air Force on the doctrine of AirLand Battle. In the evolution of the Air Tasking Cycle, the AirLand battle doctrine is extremely important and worth further investigation.

U.S. Army General Donn A. Starry developed the doctrine as a means of dealing with an overwhelming Soviet force in Europe. The doctrine emphasized maneuver and firepower to defeat Soviet echelon forces flowing across a linear battlefield.³⁷ The basic premise, taken from an in depth review of the Arab-Israeli War in 1973, was to defeat the second echelon and follow on forces prior to those forces being engaged in battle. 1976 and 1982 editions of Army Field Manual 100-5 codified Starry’s proposed doctrine. The Army Corps Commander divided the battlefield based on the timeframe of expected maneuver (see figure 2). The battle space was divided into Close (current battle to 24 hours out), Integrated (24-48 hours out) and Deep (72 or more hours out). Starry wrote “We would like deep attack to destroy enemy forces before they enter the close in battle” and a primary tool for deep attack was interdiction by air, artillery, and special operations forces³⁸.

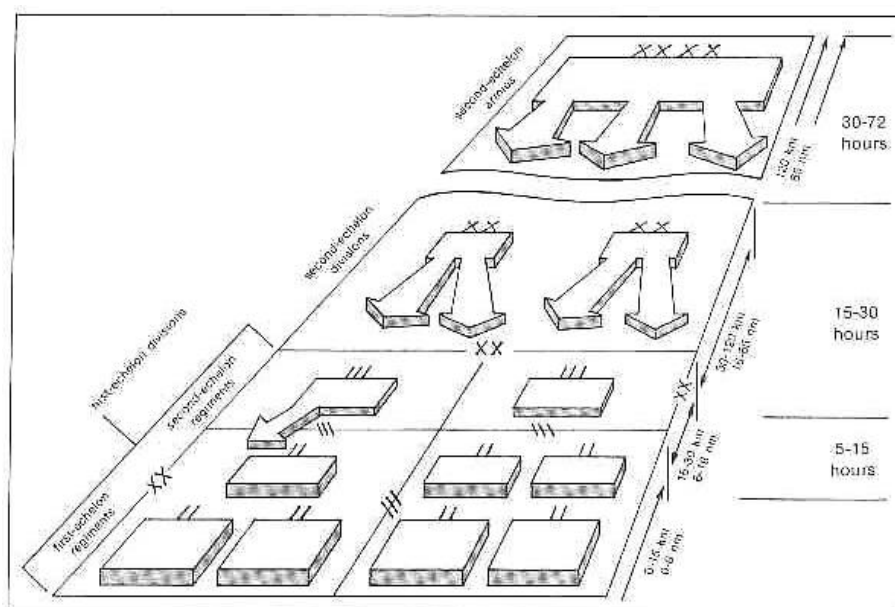


Figure 2 – AirLand Battle Enemy Echelon array³⁹

The tactical forces of the Air Force (Tactical Air Command) were very involved in the development of the Army's AirLand Battle doctrine. The Army recognized its dependency on airpower and wrote in the 1976 version of Field Manual 100-5: "Both the Army and the Air Force deliver firepower against the enemy. Both can kill a tank....But the Army nor the Air Force can fulfill any one of those functions completely by itself. Thus, the Army cannot win the land battle without the Air Force".⁴⁰

Both Services signed a number of agreements involving air-ground operations. The two Services pledged not only training, but also program and acquisition responsibilities in what became known as the "31 Initiatives".⁴¹ In fact, both the Army and Tactical Air Command became wedded to the AirLand Battle doctrine⁴². In a letter to the troops, General Robert Russ, then commander of Tactical Air Command, wrote: "Tactical

aviators have two primary jobs – to provide air defense for the North American continent and support the Army in achieving its battlefield objectives.”⁴³

Core to the doctrine, as already discussed, was the linear nature of the planned European war. airpower would serve to interdict enemy forces prior to contact with friendly ground forces. This mission became known as Battlefield Air Interdiction (BAI). Air would also assist in the close in fight with Close Air Support (CAS). The line between BAI and CAS was called the Fire Support Coordination Line (FSCL). The Army Corp Commander dictated which targets would be hit and when via CAS inside of the FSCL. Beyond the FSCL the Air Component Commander was responsible for the planning, prioritizing and destroying targets via BAI. In accordance with General Starry’s vision of Corp level planning: “The Corp commander’s concern is the deep battle – those enemy forces that are within 72 hours of the close-in battle. The Corp commander needs to have a flexible plan and 72 hours into the future in order to fight...”⁴⁴.

Figure 1. The Army's planning lines, U.S. Army view

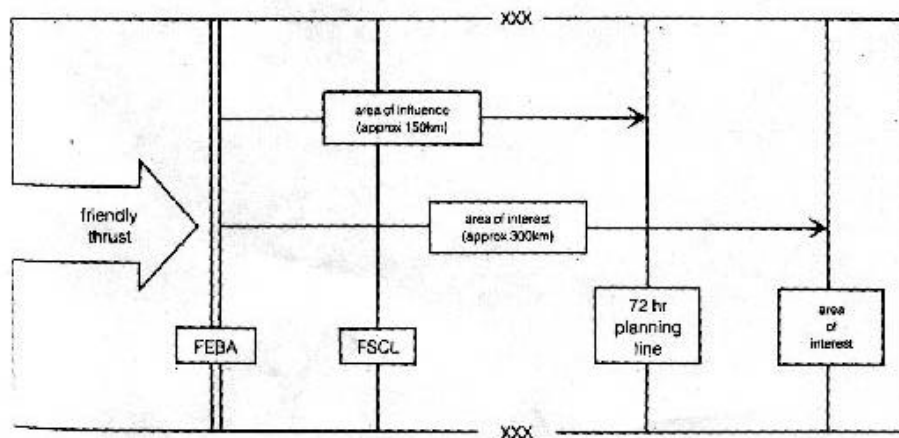


Figure 3– Linear Battlefield⁴⁵

As the Air Force planning began to evolve to meet the requirements of the AirLand Doctrine, the support to the Corp Commander became paramount. In NATO, the TACC was still the center of the Tactical Air Control System. It was the same schizophrenic system used in Vietnam, that is, divided between preplanned and CAS targets. Post Vietnam, the TACC was divided into two operations divisions: Combat Plans and Combat Operations. The Plans division was responsible for “tomorrow’s war”, the planning and targeting of interdiction targets past the FSCL⁴⁶. The Combat Operation division would ensure “today’s war” went according to the plan and CAS sorties were sufficient to meet the requests of the ground commanders.

The Combat Planning division structured their planning timeline based on the ground component scheme of maneuver in accordance with AirLand Doctrine. The ground commander’s BAI requirements and priority targets were already firm and able to be communicated to the air component at least 72 hours in advance based on its own planning cycle. This timeline fit neatly with the TACC “preplanned” ideas formed in Vietnam and thus was born the 72 hour ATO planning cycle. This cycle allowed for 48 hours worth of planning and 24 hours for execution. This planning timeline and construct were tested during Operation Desert Storm.

Desert Storm

Desert Storm was the first major combat operation post Vietnam and the first after the Goldwater-Nichols Act of 1986. Most important for this conflict was the designating of the regional Commander in Chief (CINC)⁴⁷ as the “Warfighting Commander”. He was the combatant commander responsible for the execution of warfare inside its region.⁴⁸

This act established U.S. Central Command's (CENTCOM) CINC, General Norman Schwarzkopf as the supreme commander of what would become Desert Storm with the title of Joint Forces Commander (JFC). In the military chain of command, his immediate superior was the Secretary of Defense and then ultimately the President.

As the JFC, he was responsible for setting up the joint command structure that would be so critical to the success or failure of the war. One of his choices in accordance with doctrine at the time was the creation of functional, rather than component commanders. That is delegating command based on areas of responsibility (air, sea and ground) versus service lines that had been traditionally used. The air commander was known as the Joint Forces Air Component Commander (JFACC). Joint doctrine at the time defined the JFACC's responsibilities as:

The joint force air component commander's responsibilities will be assigned by the joint force commander (normally these would include, but not be limited to, planning coordination, allocation, and tasking based on the joint force commander's apportionment decision). Normally the joint force air component commander will be the Service component commander who has the preponderance of air assets to be used and the ability to assume that responsibility.⁴⁹

The CINC, General Schwarzkopf, had given the JFACC responsibility for "planning, coordination, allocation and tasking based on USCINCCENT apportionment decisions"⁵⁰ in accordance with doctrine and further directed coordination with component commanders to "ensure integration of air operations"⁵¹. Additionally, General Schwarzkopf had directed that all air planning be done using the Air Force Air Tasking Order process, designating the air force component commander, Lt Gen Charles Horner as the JFACC⁵².

This decision was not without its critics, and initially was resisted by the Marine Corps and the Navy. Marine Air wanted to retain its direct support sorties, but eventually

authorized “excess sorties”, in accordance with the 1986 Omnibus on Marine Air, to the JFACC and the overall air effort.⁵³ Maj Gen Royal N. Moore Jr., Commander of the Marine Aircraft Wing stated that he “kind of gamed the ATO process”⁵⁴ by scheduling more sorties than he needed to ensure he did not have to coordinate with the JFACC and its command structure the TACC.⁵⁵ The Navy also resisted the implementation of the JFACC construct. The Navy felt it should have control over “fleet defense” including the sorties and the creation of rules of engagement. The Naval component commander, Vice Admiral Arthur went direct to General Schwarzkopf when the JFACC would not relinquish that authority. CINCCENT sided with General Horner (JFACC) and so ended any real discussions on who was in charge of directing the air portion of the campaign⁵⁶.

There have been many studies on the effectiveness of airpower in Desert Storm. The actual success of the war tends to speak for itself. Many critics have surfaced regarding tactical operations, but it is tough to argue with the Commander in Chief, President George H. Bush when he said, “Lesson No. 1 from the Gulf War is the value of airpower.”⁵⁷

More important than the presidential “pat on the back”, were the lessons the Department of Defense and the Services took away from the conflict. A RAND study just after the war wrote that the number one lesson learned regarding airpower was “the achievement of unity of effort with tactical control authority”.⁵⁸ The study asserts that Desert Storm was the first time since World War II that the air forces of all Services were under the tactical control of a single air commander. The actual planning for the air portion of Desert Storm was a conglomeration of ideas and “brute force management” by the lead Air Planner – Brig Gen Buster Glosson. The plan was loosely based on the

doctrine of AirLand battle previously discussed, but incorporated the use of airpower to strike “strategic” targets as well.⁵⁹ The command and control (C2) construct was also in accordance with AirLand battle doctrine and had been pretty well developed in Europe, post Vietnam. It is a worthwhile effort to investigate both the plan and the C2 construct because they will shape Joint doctrine from 1991 – 2005.⁶⁰

The responsibility to plan what would evolve into Desert Storm’s air effort was handed to General Glosson shortly after Iraq invaded Kuwait.⁶¹ Along with the responsibility for the plan, he was handed a group of 84 targets – mainly strategic – in a plan called “Instant Thunder” that the Air Staff at the Pentagon had put together based on the philosophy of Col John Warden’s National War College Thesis “The Air Campaign”. Although Warden himself briefed it, the plan failed to have the depth or scope required by the JFACC or CINCCENT since it did not include the ground scheme of maneuver into the fight⁶². In short, the Air Force had done what it had accused the other Services of doing for 50 years – supplanted the unity of effort requirements for a campaign with service parochialism. Fortunately, General Glosson saw through these shortcomings and completely revamped the plan to facilitate the Joint Force Commander’s objectives. He writes, “While the Warden effort has merit, the people involved don’t have any concern about Horner’s position or desires”⁶³. What CENTCOM leadership was looking for was a focused effort on the fielded forces of the Iraqi Army in accordance with the AirLand battle doctrine. In General Horner’s mind, he wanted to “build a hose and point it where the ground commander sees that it’s needed”⁶⁴. Both Horner and Glosson saw some benefits and merits in the Instant Thunder line of attack as well. The final plan briefed to the CINC and to the President, incorporated targets with strategic importance and the

fielded forces in accordance with the Joint Forces Commander's guidance and objectives (see Figure 4). This combination of strategies would be the linchpin in the success of the entire Campaign and would illuminate the value of airpower in a conflict to the entire world. The command and control mechanism the JFACC used to implement this strategy was the Air Tasking Order. Although General Horner would use a different format, this idea was in keeping with the tradition the Air Force had established since WWII.

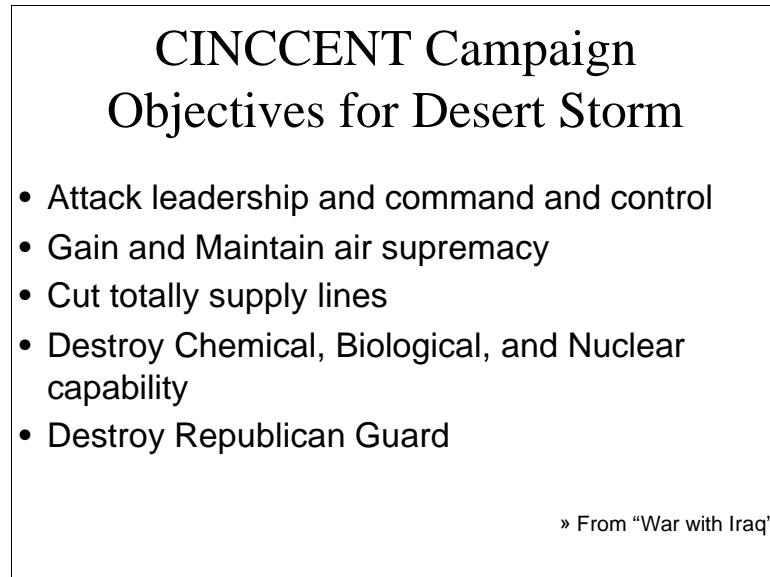


Figure 4 - Campaign Objectives for Desert Storm⁶⁵

The command and control structure of the JFACC rode on the back of the U.S. Air Force TACC concept that we have traced in its evolution from Vietnam. The TACC was comprised of mainly Air Force officers with other Services represented with liaisons. In accordance with Air Force doctrine of the time, the TACC responsibilities for operations⁶⁶ were divided into "directorates", one for planning (Combat Plans) and one

for executing (Combat Operations).⁶⁷ There were other “directorates” in the TACC designated including Air Defense, Intelligence and Airlift, but this paper will stay focused on the Operations sections and the employment of Combat airpower.

The Combat Plans Division was responsible for planning the employment of air forces in future ATO periods including “force packaging” and the use of electronic combat and refueling assets⁶⁸. The Combat Operations division “provided real-time central control and integration of ongoing air operations for the air commander”.⁶⁹ In essence, it was responsible for executing and approving changes to the ATO after it was published. There has been much written about how Desert Storm was a revolution in airpower command and control. In so much as the JFACC was proven as a concept this is true; however, the organization and as we will see the mechanism to turn the JFC and JFACC’s “vision” into execution was ostensibly the same as in Vietnam and through the 1980’s⁷⁰.

The Air Tasking Order was the product derived from the JFACC planning process. It was simply a message – a mission order – to communicate pertinent information to subordinate units. In studying ATO for Desert Storm (figure 26), it becomes clear that the format for the Order has changed from the “Frag” of Vietnam, but the majority of the information remains constant: Mission number, Aircraft type and number, unit, Call sign, Ordnance, Target and Time over Target. There is some additional information such as Identification Codes used for electronically identifying aircraft, exact desired mean points of impact (DMPI) for weapons, and remarks used to convey specific instructions from the JFACC staff. Of note, missing in these orders is any conveyance of the commander’s intent for the attacks. In keeping with the AirLand

ideals, airpower hit targets listed on the ATO requested by the Army (72 hours prior) beyond the FSCL or during CAS operations as directed by the Forward Air Controller. There was little need for the pilots/aircrews to know “why” or what effect was required for their sortie.

In Desert Storm, this issue is seldom identified simply because the planners, the Guidance – Apportionment – Targeting (GAT) team, was run by General Glosson who was also designated an Air Division commander. This put Glosson in charge of both the planning and execution of the air effort. The chief of the GAT team, Lt Col. David A. Deptula, wrote, “There was no misunderstanding or dilution of intent of the plan between the planner and those executing the plan because the same individual was in charge of both”.⁷¹ If one is to truly evaluate the effectiveness of an organization or institution, you must first identify the “personalities” in the organization, who may have overcome some of the inherent flaws in the organization itself. General Glosson is just such a personality.

General Glosson was also responsible for the entire planning cycle for each daily ATO. The “traditional” Air Tasking cycle consisted of a 72 hour process where three ATOs – each covering a 24 hour period were in work. First was the current ATO being executed, second was tomorrow’s being written and finally, the day after tomorrow is being planned and approved.⁷² This was again in accordance with the service and joint doctrine of the time based on AirLand battle. This doctrine lacked an avenue to analyze and strike targets other than the second echelon forces. During the Cold War, those types of targets were chosen and struck by the Strategic forces (with Nuclear weapons) led by Strategic Air Command. The requirement to perform analysis and pick targets to meet

the Joint Force Commander's strategy was an added responsibility in the planning process. These targets were expected to be identified, targeted and weaponized by the members of the GAT. This caused General Horner to make some changes to the traditional cycle.⁷³

One of the most innovative changes came from the Chief of the GAT Cell, Lt. Col. Deptula. He structured a Master Attack Plan (MAP) that linked the effects desired by the JFACC and the JFC to a list of targets. A Joint Targeting Coordination Board would approve these targets at the CENTCOM level, but the board was comprised of junior officers (O-3s) from separate Services and served as merely a rubberstamp to the MAP proposal.⁷⁴ This put Lt. Col. Deptula in a unique situation; he was, by all measure, solely responsible for planning the air efforts. Since there would be a significant period of Air only (From Jan 17 to Feb 24), the GAT team was not tied to the Ground Component requirements to prioritize targets. Deptula notes the MAP was the tool to create a "coherent plan that was thought out on the basis of the kind of effect we wanted to achieve, not simply matching a list of targets to a bunch of assets"⁷⁵.

All of the targets were chosen to meet the JFC – General Schwarzkopf's strategy and were vetted by General Glosson prior to being transferred to an ATO. Between the work of Deptula and his staff, and Glosson's approval, each individual mission was essentially planned by a group of highly trained operators (Weapons system experts from across all Services and platforms comprised mainly of graduates from the premier combat employment schools including: USAF Fighter Weapons School, TOPGUN, the Marine Air Weapons and Tactics Squadron and Naval Strike Warfare Center)⁷⁶ and sent out for execution. This new process circumvented normal planning channels and boiled down to

a brute force effort by the planners in the GAT, which would become known as the Black Hole. When asked if he micromanaged the process, General Glosson said, “Yes, I micromanaged the ATO. For anyone who thought it took 72 hours to make ATO changes, I was living proof it could be done much faster – closer to 72 minutes”⁷⁷.

Desert Storm Lessons Learned

This is not to minimize the Herculean work done in the GAT; in fact, victory may rest squarely on their shoulders. It is important to understand that these people adopted a system that capitalized on their individual strengths and background to “make it happen”. No one should be surprised by this. It is what warriors have done since the battle of Leuctra in 371 B.C and probably even before. However, what is surprising is the total acceptance of the primacy of the ATO process. This is without regard for the effects and workarounds due to the personalities of the players. The joint community learned a tremendous amount from both the successes and failures of Desert Storm.

Two lessons from Desert Storm are particularly germane to this paper. The first lesson - a single person in charge of the air capabilities in a campaign provides the unity of effort necessary to meet the overall commander’s objectives. It is clear that the concept of the JFACC definitely works. The second lesson taken from Desert Storm was more controversial. The Air Force organization model (the TACC) responsible for planning and executing an air effort also definitely works. Realistically, the ATO planning process that proved so successful was a very different process than the written Air Force doctrine of Tactical Air Command (TAC) Regulation 55-45.⁷⁸ Surprisingly, this regulation changed little after Desert Storm. The Air Force failed to incorporate the processes of the Black Hole planners. Instead, TAC Regulation 55-45 became the basis

for Joint Publication 3-56.1 – “Command and Control for Joint Air Operations” published in November of 1994. One exception to this failure was the addition of the Master Air Attack Plan (MAAP), which was Deptula’s MAP idea from the Black Hole⁷⁹. This failure to incorporate or analyze not only the successes, but also the inefficiencies and failures of the ATO process and then incorporate them into Joint Doctrine seems to prove the old adage “You learn more in defeat than in victory”.

Complaints

Although Joint Doctrine for air changed little after Desert Storm, there was no shortage of opinions on the successes or failures. Much of the criticism focused on the lack of responsiveness in the ATO cycle. Many critics argued that the timing from target nomination to ATO publishing was excessive. General Moore of the Marine Corps felt the ATO “does not respond well to a quick action battlefield. If you’re trying to build a war for the next 72 to 96 hours, you can probably build a pretty good war but if you’re trying to fight a fluid battlefield like we were on, then you need a system that can react”⁸⁰. This process was scheduled for 72 hours in accordance with written AirLand Battle doctrine. That is not to say it took that long in practice, as General Glosson succinctly stated⁸¹.

A better gauge of the responsiveness of the ATO process is to analyze the efficiency of the process. It is simple for strong personalities to “brute force” manage a process and get the results needed – which is what the Black Hole and General Glosson did in Desert Storm. However, evaluation of the ATO cycle efficiency should remove personalities from the equation. A rough measure of the process is how often the target

planned for 72 hours in advance was the target actually struck during execution. Figure 5 shows a graphical representation of ATO changes during each day of Desert Storm.

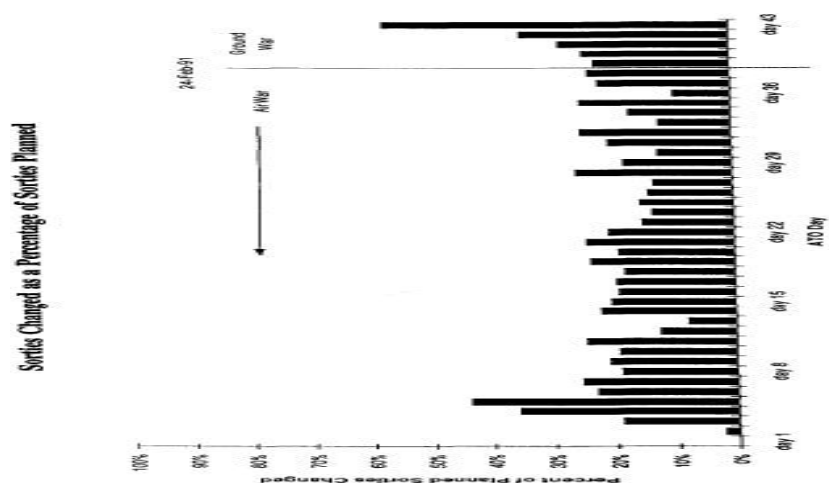


Figure 5 – ATO Changes⁸²

On average, about 20% of the sorties were changed from conception to execution. Of note, however is the dramatic increase, up to 40%, in changes after the ground portion of the campaign began. These statistics leave a large amount of skepticism as to the efficiency of the system that was adopted as joint doctrine. The fact that the ATO was at best the 80% solution and dropped to 60% when the ground war began to move faster than anticipated clearly demonstrates that there are built-in inefficiencies that should have been looked at during the critical analysis of the successful operation. It appears to be a valid argument that the ATO process is not as efficient nor as responsive as it could be.

This analysis clearly answers the second and third questions posed at the beginning of the paper: is the process to create the ATO based on correct assumptions and as efficient as it could or should be? The first portion of the question leads us to ask

if AirLand Battle is over. The answer to that question became apparent with the demise of the Soviet Union and the end of the Cold War. Even former Chief of Staff of the Air Force General Larry D. Welch recognized the inefficiencies when he said of Desert Storm “We did focus on the CINCs intent...but it took us 5000 pages and 72 hours to produce an ATO”.⁸³ The reliance on the strength of individuals to cover the ingrained problems with the ATO cycle and target outside the cycle would evolve into an entire new mission set – Time Sensitive Targeting during the next conflict in Kosovo – Operation Allied Force.

Logistics play/assumptions

A benefit of the 72 hour planning construct that should be addressed is logistics planning stability. The current process prescribes the number of sorties required by the JFACC more than 24 hours in advance. Although Desert Storm targets changed 20-40 percent of the time in the process, the sorties required of individual units remained set in stone. This unforeseen benefit provided stability for maintenance and weapons loading that were not available during the Vietnam and Cold War. In the case of Vietnam, aircraft were put on alert, launched and replaced throughout the day. In the AirLand battle doctrine, sorties were expected to be continually generated for BAI and CAS as fast as possible since there were more requirements (i.e. targets), than aircraft available. During these times, the focus on a rapid regeneration to combat was paramount.

Desert Storm changed the regeneration priority, primarily because the preplanned sorties met the requirements for the preponderance of the effort. CAS was the one exception since it was difficult to precisely predict what requirements the ground component would generate. To alleviate this issue, General Horner instituted a concept

called “push CAS” where aircraft were scheduled to take off every 10 minutes into the battle area and then “flexed” to other targets if not needed.⁸⁴ These sorties were listed on the ATO and distributed to different units. In this way, the alert type aircraft were not needed as they were in Vietnam. This certainly made scheduling and resourcing similar to peacetime training where sorties are typically planned in two separate waves⁸⁵. This stabilizing benefit to ease service workload however, should not be a driving force in the development of a new planning construct for the Air Tasking Order. The better driving force would be an understanding of the requirements by the supported units or commands.

Allied Force

The success of Desert Storm validated the synergistic effects of a combined arms campaign. Although not perfect, air, land and naval power were integrated competently to meet national and theater objectives. There was an evolution of sorts – a perfect storm where the U.S. military nemesis, the Soviet Union had just crumpled, so the weight of the military could be focused on Iraq. The operation was fairly complex, and would test the JFACC idea and Air Tasking Cycle framework as we saw. The JFC and land component requirements were addressed in the air operations plan and execution, albeit in a less than optimum manner, and were met overall.

The operations in Kosovo during in the spring of 1999, called Operation Allied Force (OAF) can be considered a watershed event for planning of the Air effort. For the first time in history, the world would see a true Air Campaign, where the only kinetic military force exerted on the enemy would come from the air. One might expect a revolution of the planning process whereby the JFACC would no longer be hampered in

meeting the needs of the other component commanders. Gen. William “Billy” Mitchell wrote in 1925,

The system of command of military airpower should consist in having the greatest centralization practicable. An air force now can move from one to two thousand miles within twenty-four hours. Military elements on the land or water can move only a fraction of this. To assign air force units to any one of these ground organizations would result in the piece-meal application of airpower and the inability to develop the maximum force at the critical point.⁸⁶

This was Billy Mitchell’s dream – Airmen in charge of the entire effort. Unfortunately, the Air Operations Center, rather than adapt to the new requirements, followed in lock step the AirLand/Desert Storm construct of planning an air effort.

Operation Allied Force officially began on 24 March 1999 and lasted for 78 days. After multiple attempts to reach a diplomatic solution to stop the human rights abuses and “ethnic cleansing” of the ethnic Albanians in Kosovo by the Serbian government and its president Slobodan Milosevic, NATO authorized air strikes for the first time in its existence⁸⁷. Operation Allied Force ruled out any implementation of ground forces from the beginning, leaving only the air forces and the JFACC to meet the Joint Forces Commander – General Wesley K. Clark’s objectives. President Clinton described these objectives as: 1-“to demonstrate the seriousness of NATO’s opposition to aggression”, 2-“to deter Milosevic from continuing and escalating his attacks on helpless civilians”, 3-“to damage Serbia’s capacity to wage war against Kosovo”⁸⁸. The job of the JFACC fell to General Michael C. Short, as Commander Allied Air Forces Southern Europe⁸⁹. As in Desert Storm, Gen. Short was given at least tactical control over all aircraft involved in the operation. For all practical purposes, the battle for unity of effort in air warfare by the United States military was over. Indeed, even the NATO countries involved in the operations gave tactical control of their air assets to General Short.⁹⁰

The campaign itself was reminiscent of Operation Rolling Thunder in Vietnam – a gradual escalation to provide “coercive diplomacy”. Initially, 51 targets were approved for strikes during the expected two to three days Milosevic would take to acquiesce to NATO terms⁹¹. Unfortunately, as in Vietnam, the will of the Serb leadership was stronger than the intelligence estimates and personal views of the U.S. Secretary of State Albright.

The initial targets consisted of Serbian airfields and Army bases, communication centers and storage depots and were approved by the President and all NATO political and military leaders⁹². Instead of giving up, the Serbs began to step up efforts to kill the ethnic Albanians. It was apparent to NATO and the world that Milosevic would not go quietly.

Eventually the list of potential targets would grow to 976, but each had to be approved by the CINC and by each of the participating NATO countries in order to make the ATO⁹³. The timeframe for target approval became excessive so planners moved from looking at what targets would meet the strategy of the JFC/JFACC to what targets they were allowed to strike. Again, reminiscent of Vietnam, the AOC planners “simply took a list of approved targets and managed them on a day to day basis”⁹⁴. This was the job of the Combat Plans section of the AOC.

After two weeks of being unable to achieve any strategic objectives and under the weight of international pressure to stop the “ethnic cleansing”, General Clark shifted his emphasis to the fielded forces of the Serb Army and Militia. This created an additional target set for the JFACC and his staff. Historically, these types of target sets were given by the Land Component Commander 72 hours in advance in accordance with the

AirLand Battle doctrine. Now these targets were the Air Component's responsibility to find, prioritize and strike. All of these targets fell inside the ATO cycle timeline, so rather than change the planning construct, the AOC added a new mission, called "flex targeting"⁹⁵. In this mission, aircraft would sit either ground alert or airborne alert waiting for a target to be found. Additionally, "airborne scouts" were sent out to visually search for targets, find and assess potential collateral damage, and if the target met stringent Rules of Engagement and collateral damage requirements, destroy it⁹⁶. This type of mission was almost identical to the "reroleing of targets" versus perishable targets we saw in Vietnam. In fact, pilots flying in Kosovo called these missions "close air support" like Vietnam, even when there were no ground forces to "support"⁹⁷.

In the end, Milosevic capitulated, arguably at least partially because of air strikes. Evidence shows there were probably a number of reasons the Serbian leadership gave up when they did, not the least of which was the continued bombing of industry, utilities and infrastructure targets.⁹⁸ The Operation ended up achieving its objective, but well beyond the timeframe anticipated. Not meaning to minimize the myriad of mistakes and lessons from the strategic to the tactical level in OAF, a major lesson was the need to have an institutionalized effort to strike targets that appear inside of the 72 hour planning cycle.

The Air Force Chief of Staff, General John J. Jumper commented:

"The 72-hour cycle was not an execution cycle but an attempt to force a planning cycle so you are having some means within your phased operation to look out on the horizon. But for the execution, many times it was within four and six hours when we were not only changing targets, but also changing munitions on airplanes to accommodate targets. This is not obviously the way that we would like to do it when you talk about minimizing risks to pilots, but it was done because that was the way the target set presented itself and that is another aspect of the same problem that you described. But we need to work on both of those things and continue to shrink those cycles".⁹⁹

In an effort to “shrink the cycle” flex targeting emerged as the latest “fad” in overcoming the friction and inertia associated with ATO planning. As time progressed, flex targeting evolved into Time Sensitive Targeting and made its way into Joint Doctrine in time for the next conflict in Afghanistan – Operation Enduring Freedom (OEF).

Enduring Freedom

October 7, 2001 began Operation Enduring Freedom, the American response to the terrorist attacks on September 11th 2001 by Islamic terrorists and orchestrated by Osama Bin Laden and his radical Islamic organization – al Qaeda. The objective of the operation was to destroy al Qaeda leadership, organization and training camps based in Afghanistan and remove the Taliban government from power¹⁰⁰. This operation was another evolution in the use of airpower. In this case, a small number of ground forces served as “sensors” to search out enemy forces and use airpower to destroy them. This scenario was eerily reminiscent of General Clark’s later objectives in Allied Force of destroying the Serbian army.

The concept of operations by the Combatant Commander, General Tommy Franks was to avoid a “Soviet-style occupation” and instead use “small, lethal and unpredictable units coupled with precision” to meet the objectives set forth by the President in his speech to the American people on 20 September 2001¹⁰¹.

The original plan called for four phases. Phase 1 was to “set the conditions and build forces to provide the National Command Authority credible military options”¹⁰². That included putting special operations forces and CIA assets on the ground to work with the indigenous opposition forces called the Northern Alliance. These opposition forces would provide the preponderance of ground forces in the first two phases. Phase 2

called for “initial combat operations and continued to set the conditions for follow-on operations”¹⁰³. During this time, airpower would provide the firepower by first targeting the Taliban and al Qaeda command and control, air defenses, and large troop concentrations in garrison. Special Forces teams would then ensure the Northern Alliance had the required air support and firepower to begin offensive operations. Phase 3 involved “conducting decisive combat operations in Afghanistan, build a coalition, and conduct operations AOR wide”¹⁰⁴ using conventional forces on the ground. Frank’s intent was to minimize the use of ground forces, but would commit “Battalions and Brigades” if the Northern Alliance was not successful¹⁰⁵. Finally, during phase four we would establish “capability for coalition partners to prevent the re-emergence of terrorism and provide humanitarian relief” and was expected to take between three to five years¹⁰⁶.

It is clear General Franks expected the JFACC, Lt Gen Charles Wald, to play a decisive role in Phases two and three. The AOC had started planning for OEF immediately after 9/11 and by October was ready to initiate combat action. The number of authorized targets was limited and authorization to strike these targets was held at CENTCOM versus being delegated to the JFACC¹⁰⁷. The Joint Integrated Prioritized Target List (JIPTL) was the list of targets which the JFC felt would achieve his objectives. Based on concerns of General Franks to limit “collateral damage” and to avoid the “strategic” setbacks that could be caused with a tactical mistake such as an errant bomb, components could nominate targets, but the approval authority was held by the JFC¹⁰⁸. In a strange twist of fate, the JFACC staff who had first created the concept of a JIPTL and the MAAP during Desert Storm, saw control wrestled away from the air

component and centralized at the JFC level¹⁰⁹. In essence, the JFACC and the AOC had partially lost its ability to strategically plan and became a merely a “servicer” of targets.

After about 10 days of air operations, the majority of fixed targets in Afghanistan were destroyed, in fact according to General Wald most of the Command and Control and Air Defenses were targeted and destroyed in the first 15 minutes of the war¹¹⁰. With very few targets left to plan for, the bulk of the employment was done on the “AOC Floor”, that is by the Combat Operations Division. A system developed over time that allowed for coordination between CENTCOM planners – who held target approval – the CENTAF planners and the tactical units, both on the ground and airborne¹¹¹.

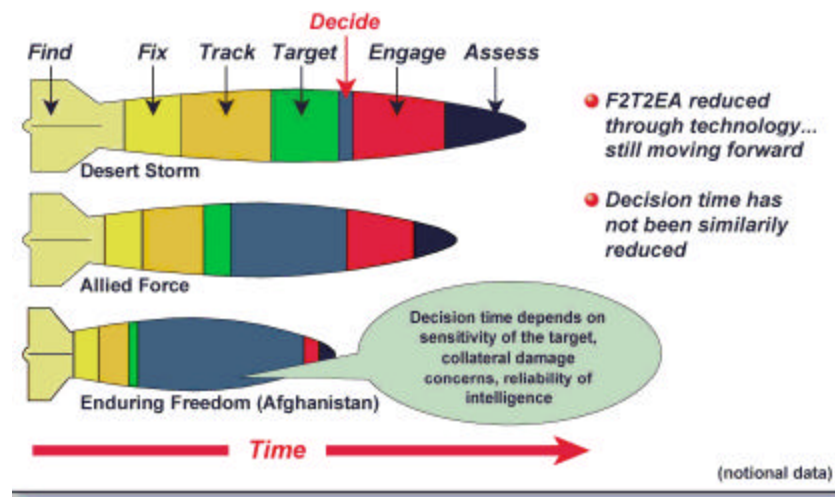


Figure 6 - TST time reduction¹¹²

The ATO served to schedule aircraft, but rarely did its prescribed targets have ordnance expended on them. Instead, the aircraft were diverted to new targets by the AOC Operations floor when new, more lucrative targets were discovered after the ATO approved 36 hours prior. This caused one officer in the AOC to note,

“the plans division was not happy with the number of changes that occurred, but the operations division did a great job in responding to the changing requests on the ground. We used to make the joke that the ops division should take the MAAP and throw it against the wall, and whatever stuck would be flowed as scheduled. Not much stuck to the wall.”¹¹³

The MAAP was used much more than the finished ATO because it conveyed the JFACC’s objectives and intended effects. In fact, the ATO was significantly less useful for subordinate organizations such as the Carrier Air Wings and Air Force Expeditionary Wings, and in the end, served merely as a way to convey communications frequencies, call signs and annotate what types of aircraft would be in the Area of Responsibility (AOR).¹¹⁴

Again it is clear, in a fluid environment where there are not fixed targets, the Joint Air Tasking Process lacks efficiency and potentially has been overcome by the nature of 21st Century warfare. It again must be noted that while the ATO process is clearly “less than optimum”, its lack of efficiency was overcome by the ingenuity and flexibility of operators at the operational and tactical levels. By the end of “major operations” in OEF, the time from target identification to destruction had moved to less than 20 minutes and in CAS operations less than five.¹¹⁵ This system would be further streamlined and improved in the spin up to the U.S. invasion of Iraq in 2003 – Operation Iraqi Freedom (OIF).

Iraqi Freedom

By all accounts, the U.S. military strategically, operationally, and tactically overwhelmed the Iraqi forces causing Saddam Hussein’s regime to collapse in only 21 days. Initially the operation succeeded in its Political and Military objectives for the

invasion of Iraq. Figure 7 shows the six strategic objectives for OIF. This brief analysis will focus on the period from 19 March 2003 until 14 April 2003 when “major” military operations ended¹¹⁶.



Figure 7 - OIF Strategic Objectives¹¹⁷

OIF, with over 466,000 deployed, was the largest military operation since Desert Storm¹¹⁸ and was the first “traditional” combat operation in the Global War on Terror (GWOT). OIF came on the heels of OEF, and in fact lower level combat and stability operations in Afghanistan would take place simultaneously with Iraqi Freedom. The Joint Forces Commander (called the Combined Forces Commander or CFC) was again General Franks, the CENTCOM commander. The JFACC was Lt Gen Moseley, who had been the JFACC in the later portions of OEF. The AOC would be staffed with “handpicked personnel” from the tactical experts across all the Services¹¹⁹ and would be responsible for air operations averaging approximately 1400 sorties per day¹²⁰. Figure 8

shows the objectives General Franks ultimately set, and the specific mission areas the JFACC set for himself.

CFC OPERATIONAL OBJECTIVES

- Defeat or compel capitulation of Iraqi forces.
- Neutralize regime leadership.
- Neutralize Iraqi TBM / WMD delivery systems.
- Control WMD infrastructure.
- Ensure the territorial integrity of Iraq.
- Deploy and posture CFC forces for post-hostility operations, initiating humanitarian assistance operations for the Iraqi people, within capabilities.
- Set military conditions for provisional/permanent government to assume power.
- Maintain international and regional support.
- Neutralize Iraqi regime's C2 & security forces.
- Maintain and maintain air, maritime and space supremacy.

STF : JFACC TO-TASK MISSION AREAS

- Maintain Air and Space Supremacy in the ITO
- Support CFLCC to achieve defeat or compel capitulation of RGFC & RA and conduct Security and Stabilization Operations (SASO)
- BPT support the prevention of non-combatant forces from impeding CFC Operations
- Support CFMCC to Maintain Maritime Supremacy
- Support CFC to secure regional and international support
- Conduct JRSOI of Follow-on/Combat Replacement FEs and maintain air posture
- SR Continue suppression of Iraqi Regime's ability to command Iraqi forces & govern State
- SS BPT establish and operate secured airfields in Iraq IOT establish alternate APODs in support of CFC ops
- UW Support CFSOCC Ops
- WD Suppress Iraqi TMD/WMD delivery systems
- WI BPT support CFLCC in neutralizing/controlling WMD infrastructure & SSE

Figure 8 – General Franks OIF Operational Objectives and JFACC Tasks¹²¹

Taking a lesson from Afghanistan, the planners in the AOC devised a concept called Kill Box Interdiction and Close Air Support (KI/CAS) where missions would take off and be directed to wherever airpower was needed without having been assigned any preplanned targets. The aircraft would either be directed to a 30 mile by 30 mile grid to search for targets or would be handed off to a controller for CAS. This system was the culmination of multiple “live fly” exercises at Nellis AFB prior to March of 2003 to evaluate and optimize this way of tasking airpower¹²². Although reminiscent of Vietnam, it was the pace of battle rather than the micromanagement of senior leaders that drove the KI/CAS idea. This was an acknowledgement that the pace of combat operations had exceeded the abilities of the ATO cycle.

In a report shortly after the collapse of the regime, the JFACC published a collection of statistics from the effort. Specifically germane to the topic of this thesis is the Desired Mean Point of Impact (DMPI) struck by operational objective – figure 9. DMPIs are individual targets sometimes in a larger target set. For example, if a target is a Surface to Air Missile site, individual DMPI could include the Radar, Missile launchers, the command and control van etc. Figure 9 shows that KI/CAS accounts for 79 % of the targets struck in OIF¹²³. In essence, almost 80% of the targets that had ordnance applied to them were outside of the ATO cycle.

DMPI Struck by Operational Objective

Counter Air Targets	1,441	7%
Fixed Counter Lnd Tgts	234	1%
Attacking Iraqi Regime	1,799	9%
Attacking WMD	832	4%
KI/CAS	15,592	79%

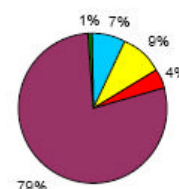


Figure 9 - DMPI Struck by Objective ¹²⁴

In Afghanistan, Time Sensitive Targets (TST) were any targets that were not preplanned. In OIF, General Franks delineated only three types of targets as TST, Weapons of Mass Destruction, Regime Leadership and Terrorists. These targets were deemed especially important and to have such strategic effects that they would take precedent over most if not all planned targets¹²⁵. In addition to the TST target sets, the JFACC realized there were component specific target types, called Dynamic Targets (DT), that were integral to a successful strategy and would require diverting aircraft from their preplanned missions. These missions comprised a very small number of the total

flown by coalition aircraft during OIF. Of the over 41,000 missions flown, a total of 842 missions went against these extremely important targets¹²⁶.

In the modern battlefield, as in days of old, actionable intelligence can come at any time and any effective command and control structure must be ready to meet the task. When intelligence agents received a probable location of Saddam Hussein (the Leadership Target) it took less than 45 minutes to plan, obtain authorization and execute the mission to drop four 2,000 lbs bombs on the location¹²⁷. No one can foresee these “fortunes of war”, but it also must be understood that even with Intelligence Surveillance that covered 24 hours with multiple sensors including human collectors on the ground only 2% of the mission were tasked with TST/DT¹²⁸.

In the executive summary of USCENTAF Lesson Learned for OIF, the AOC staff acknowledged what the culmination of this historical analysis into the Air Tasking Order Cycle has brought us to conclude:

“Each ATO plan and related planning products are developed in series; passing from Strategy, to Plans, to Ops for execution and then back to Strategy for assessment...the greatest hiccups in the process occurred in the seams between divisions because of the rapid pace of operations during OIF often necessitated significant changes inside the ATO cycle. It was not uncommon for an (Air Operations Directive) developed by the Strategy Division and approved by the CFACC 60 hours prior to execution to be overcome by events before it reached the MAAP Cell 24 hours later.¹²⁹”

Upon reflection of the operations they had just participated in, the hypothesis of this monograph became clear to the military professionals that put together this report – The ATO planning construct lacks the efficiency to be effective in 21st century warfare. A new system must be developed to capitalize on the inherent flexibility of airpower. The

first step in this development is an investigation of the joint doctrinal basis for the employment of air.

Present Day Way

Joint Air Operations Planning – Joint Pub Guidance

The cornerstone of Joint doctrine for air operations is Joint Publication 3-30, “Command and Control of Joint Air Operations”. It spends the majority of its pages discussing planning for Joint Air Operations versus actual command of, or control of the forces allocated to the JFACC. An entire chapter, Chapter 3 is devoted to discussing the Joint Air Operation Plan, or the JAOP. The JAOP is the air component’s operational plan for “integrating and coordinating joint air operations”¹³⁰ and is the culmination of the Joint Air Estimate Planning Process¹³¹. Simplified, it takes the guidance from the Joint Forces Commander and creates a plan to achieve the tasks and effects levied on the air component either directly by the JFC or as a supporting force for the other components¹³².

The process uses the Military Decision-Making Process construct as defined in Joint Publication 5-0 and the concept of “nested” effects and tasks. The nested concept simply means the objectives and mission of the subordinate organization (in this case the air component) directly support the end state and mission of the higher command (the Joint Forces Commander). From the JAOP the JFACC communicates his commander’s intent, mission statement and planned course of action including objectives and tasks for different phases of the operation¹³³.

Figure 10 shows how joint doctrine describes the Joint Air Operations Development. It clearly shows there is a link between the JAOP, the MAAP and the ATO. The JAOP can be described as the overarching guidance from which the Master

Air Attack Plan and subsequently the ATO is built. Figure 11 shows the Joint Air Tasking Cycle where the JAOP is alluded to in step one, though it is never specifically referenced.

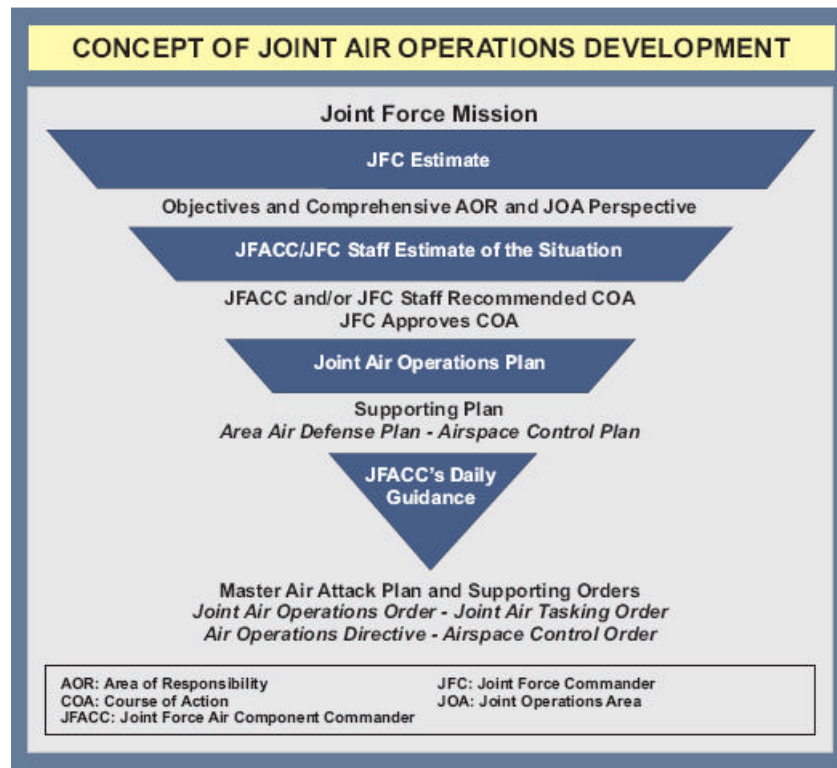


Figure 10 – Joint Doctrine for JAOP development¹³⁴

From the guidance contained in the JAOP, the different divisions in the AOC begin their work. These divisions work in series, that is one group finishes their portion before the next division begins. These sequential steps create a series of daily targets and supporting tasks that will meet the JFACC's chosen course of action and begin with the Strategy division. The Strategy division also writes the JAOP, and puts out a daily Air Operations Directive (AOD) that provides the "JFACC's guidance for each ATO to the

successive planning steps¹³⁵. The AOD is supposed to give the subsequent planners the information they need to prioritize tasks to meet JFC and JFACC objectives.

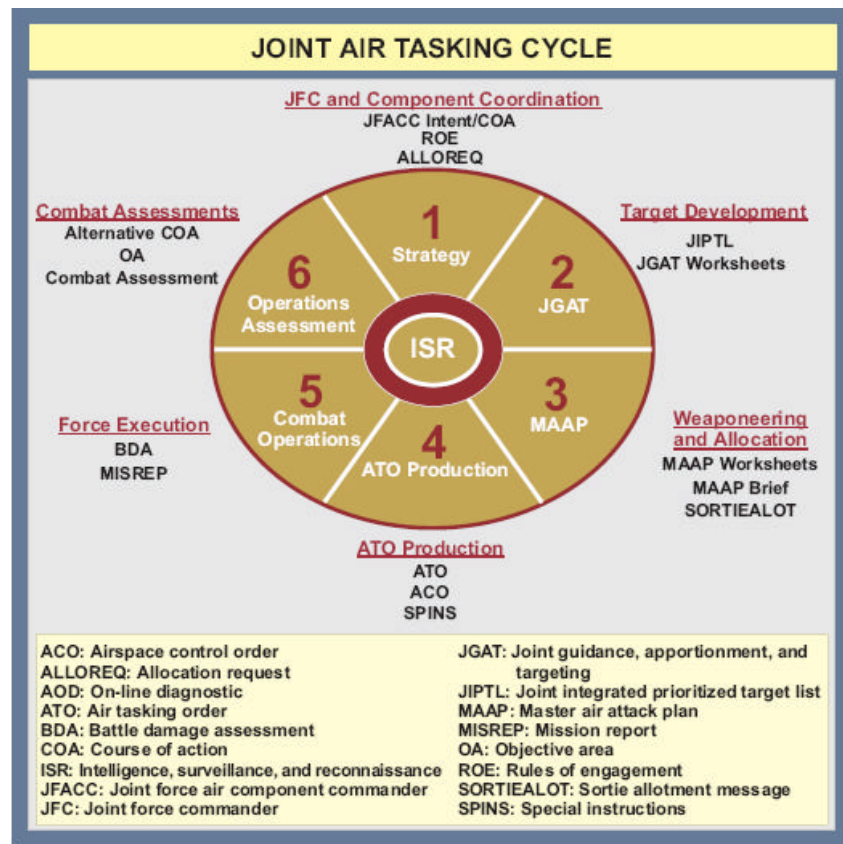


Figure 11 - Joint Air Tasking Cycle¹³⁶

The next organization in the process is known as the joint guidance, apportionment, and targeting team (JGAT) in the Combat Plans division. This team, in accordance with the JFACC's tasks provided by the Strategy Division and the AOD, "develops the daily JFACC planning guidance, air component target nomination list, and air apportionment recommendation. The team is responsible for the development of a comprehensive

JIPTL. If the JFC delegates joint targeting coordination authority to the JFACC, the JGAT team receives all target nominations and prioritizes them into the draft JIPTL”¹³⁷.

One of the first steps of this process, a step glossed over in Joint Doctrine, is the air apportionment recommendation. The JFACC will recommend to the JFC specific percentages of aircraft for various categories of missions. Examples of categories of missions include strategic attack, interdiction, counter-air, and close air support. The joint forces commander approves or changes the apportionment recommendation and forces are then allocated in accordance with the JFC’s direction, thereby removing the responsibility for any perceived lack of support from the JFACC.

This apportionment and allocation process is based on inter-service resistance to the JFACC construct prior to and just after Desert Storm. The JFACC is now well entrenched in doctrine and it is time for a re-evaluation as to the logic behind and usefulness of the apportionment process. If joint doctrine were to adopt a more efficient air tasking planning process, there may be a significant reduction in the need to arbitrarily assign percentages to the required tasks of the air component.

The next team in the Plans division to work on the process is the Master Air Attack Plan (MAAP) team. This organization develops the daily plan to accomplish the tasks given to the JFACC. JP 3-30 states “The daily MAAP coordinates and integrates all air efforts used to develop the ATO. The fundamental responsibility of the MAAP team is to produce a timely and executable ATO”¹³⁸ based on the JIPTL and allocation guidance. An example of inputs to the MAAP is seen in Figure 12. As discussed earlier, the MAAP was a tool used and in fact invented by then, Lt Col Deptula during Desert Storm. It was and is an incredibly useful tool to plan the air portion of a campaign. One

has to wonder though, if this tool has taken on a life of its own in order to attempt to institutionalize the successes built on the personalities of the “Black Hole” in Desert Storm.

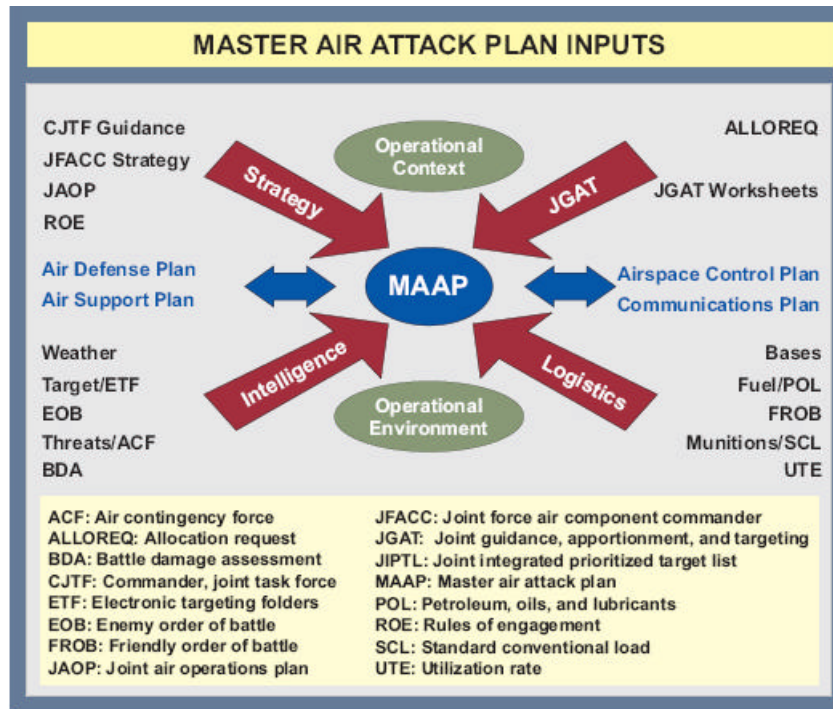


Figure 12- Master Air Attack Inputs¹³⁹

The last process prior to the publishing of the ATO is the production team. This team is responsible for “the technical production and distribution of the ATO”, and other command and control documents like the Airspace Control Order (ACO) and the daily Special Instructions (SPINS)¹⁴⁰. Typically, as seen in Figure 13, the JGAT to ATO publishing takes 48 hours with another 24 hours for execution and assessment. As the explanation of current doctrine concludes, one begins to wonder if this sequential effort

of the ATO process creates some of the significant inefficiencies expressed in the historical analysis.

These built in friction points and redundant processes lead investigators to one conclusion. The planning and execution of the ATO cycle must be better organized in a parallel effort where the Strategy, JGAT and MAAP teams work in a combined team, inside a collaborative environment where the JFACC's required effects are developed and resourced by one organization.

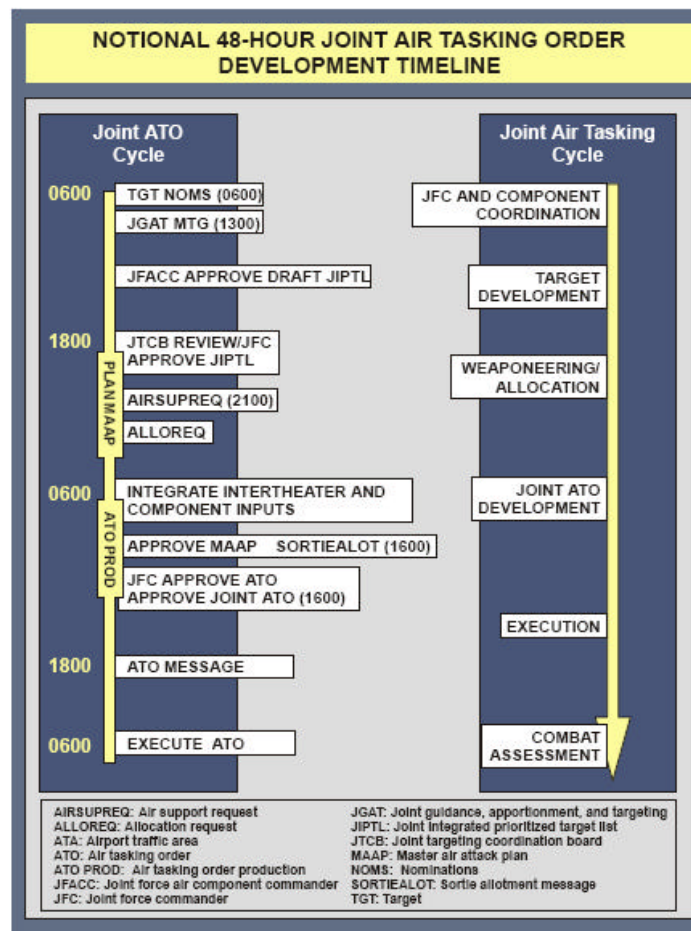


Figure III-12. Notional 48-Hour Joint Air Tasking Order Development Timeline

Figure 13 - Notional ATO Development Timeline (2005)¹⁴¹

Tenet of Centralized Control/Decentralized Execution

Throughout the introduction of this paper, the terms Centralized Control and Decentralized execution were used to describe a tenet of airpower. If this underlying premise is at the heart of the JFACC structure a precise definition must be understood by

all. Joint Publication 3-30 (and ultimately JP 1-02) defines centralized control and decentralized execution as:

centralized control: In joint air operations, placing within one commander the responsibility and authority for planning, directing, and coordinating a military operation or group/category of operations¹⁴².

decentralized execution. Delegation of execution authority to subordinate commanders¹⁴³.

Centralized control is treated differently (and separately) than Command in Joint doctrine. Joint Publication 3-0 defines command as including “both the authority and responsibility for effectively using available resources to accomplish assigned missions. Command at all levels is the art of motivating and directing people and organizations into action in order to accomplish missions. **Control is inherent in command.** To control is to regulate forces and functions to execute the commander’s intent. Ultimately, it provides commanders a means to measure, report and correct performance.¹⁴⁴” If control is inherent in command, it stands to reason that that control is a subset of command. It is a responsibility given to an individual (in this case the JFACC) to centrally plan air operations. The definition also includes directing and coordinating the execution of the plan.

Decentralized execution was included in the airpower tenet after perceived micromanagement of the operation by the National Command Authority in the Rolling Thunder operations in Vietnam¹⁴⁵. The premise is to delegate execution authority down to the lowest level. These two ideals seem to match the ideas overarching command and control ideals prescribed in Joint Publication 1, Joint Warfare of the Armed Forces of the United States. It asserts centralized planning and direction is “essential for controlling and coordinating the efforts of all forces available.”¹⁴⁶ These are the same professed

principles of the Army and Marine Corps, both of whom use centralized planning and mission type orders to communicate objectives and execute a plan¹⁴⁷. Although all the Services appear to ascribe to the same principles, there have been times in recent history where actions have not matched doctrine.

Misuse of Tenet

Technology has progressed to such a point that it gives the illusion of the great General overseeing the entire battlefield and directing his troops. This romantic notion does not stand the test of history. Quite the contrary, even Patton, known for his autocratic leadership style wrote, “The hardest thing I have to do is to do nothing. There is a terrible temptation to interfere”.¹⁴⁸ As our ability to share information grows, so does the temptation to try to over control. In the General of old example, being able to see the battlefield and assess progress is far different from telling each man in the Phalanx which person he should try to kill. Picture, if you will, Lee at Gettysburg, attempting to tell men whom to shoot during Pickett’s Charge. Just because a Senior Commander¹⁴⁹ can see everything going on, does not mean he should intervene.

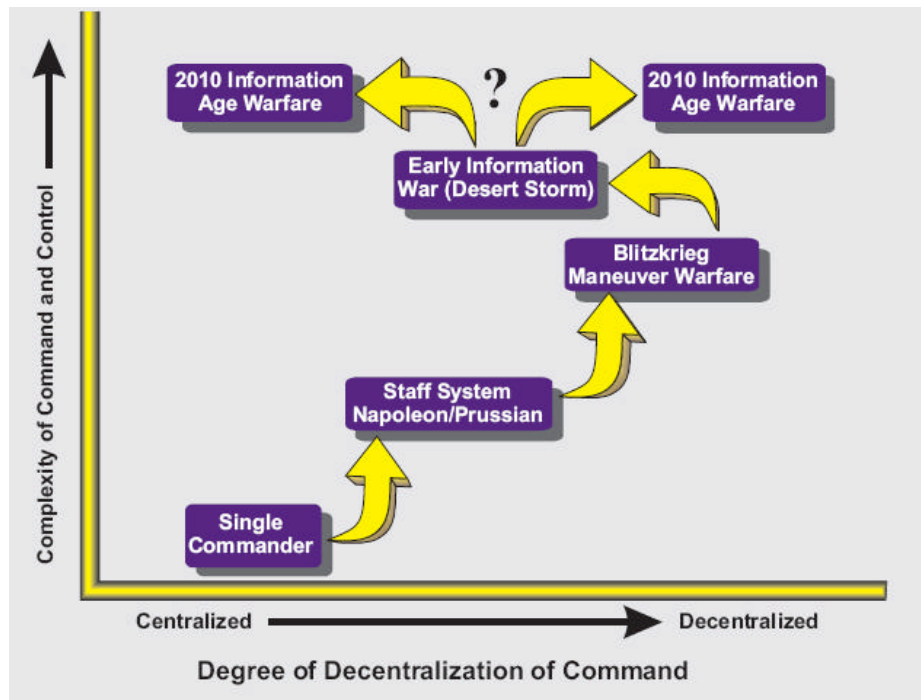


Figure 14 – Historical Progression of Decentralized Execution¹⁵⁰

Recent history of Joint airpower is full of examples of centralized control and execution at the operational level. In fact, there are a growing number of published papers lamenting the virtues of “Centralized Control and Centralized Execution”¹⁵¹ and arguing the TST cell in the AOC is a perfect example of this evolution. Figure 14: Historical Progression of Decentralized Execution is taken from Joint publications discussing the optimum way for future command and control models.

Interestingly, these same proponents will argue vehemently against the perceived encroachment and micromanagement of the command of air throughout history. Favorite examples given that have already been discussed in this paper are President Johnson’s choosing of targets in North Vietnam, General Clark authorizing strikes in Kosovo and

General Franks control of the JIPTL during Operation Enduring Freedom. Clearly these are also examples of “centralized control and execution” though airpower zealots will bristle at the thought of these illustrations. “Central” is certainly relative to where you sit in the decision making cycle.

Lower subordinate units all the way to the tactical level must have the freedom to affect an ever-changing battlespace and must be armed with the knowledge of the effects the commander – specifically in this case the JFACC desires. Operation Iraqi Freedom saw an illustration of this fact during KI/CAS operation late in the war. The AOC planners would include the desired effects for the geographic area in the remarks of the ATO giving the pilots not only recommended targets, but the ability to prioritize the types of strikes based on the effects needed to achieve the JFACC’s and JFC objectives in the area¹⁵².

If one compares the centralized control and execution model of TST that proponents often cite with the decentralized execution model of Kill Box interdiction in Operation Iraqi Freedom the efficiencies become clear. Of the 41,404 sorties flown in the operation, only 156 were flown in support of TST targets¹⁵³. Contrast that with the 15,592 targets that were struck using the KI/CAS¹⁵⁴. It is obvious the decentralized model was more capable of handling a large amount of targets. There is a definite need for TST missions, but that centralized method of execution should be the exception not the rule of command and control.

Fire and maneuver win battles. The purpose of movement is to get fires in a more advantageous place to play on the enemy. Air and Ground commanders must be constantly on the alert to devise and use new methods of cooperation . . . for there can never be too many projectiles in a battle. —General George S. Patton Jr., USA

Doctrinal issues for targeting development

General Patton’s quote above emphasizes fires as the preeminent effort in a battle. The objects, persons or processes the military is going to effect and influence – the locations where the joint force will aim its “many projectiles” are called targets. The development of targets require a great expenditure of time and effort in order to evaluate and prioritize the optimum placement of fires and is essential to the ATO cycle. In order to continue to investigate the Air Tasking Cycle, it is necessary to take a systems view of the process that takes the Joint Force Commander’s intent, objectives, and required effects and translates them into actionable tasks for subordinates. Joint doctrine refers to this process as “Targeting”¹⁵⁵.

Joint Pub 3-60 explains the purpose of “Targeting” is to provide a logical progression of Warfighting solutions to meet the Joint Force Commander’s objectives. It goes on to say, “effective targeting is distinguished by the ability to generate the type and extent of effects necessary to facilitate the realization of the commander’s objectives.”¹⁵⁶ It is unfortunate that the result of the targeting process is normally a list of geographic spots on the earth that require kinetic (or non-kinetic) fires, the Joint Integrated Prioritized Target List (JIPTL).

In an effort to avoid semantic arguments this process involves both operations and intelligence functions. Targeting (at least the way it is used in this paper) is not intended to refer to specific military specialties from any service. Figure 15 shows the six phases of the Joint Targeting Cycle as defined by JP 3-60 which begins in the Joint forces

headquarters with the JFC's objective. The cycle is supposed to “translate strategy to discrete tasks”¹⁵⁷ but in fact focuses on creating the list of targets that the various components will be required to strike.



Figure 15 - Joint Targeting Cycle Phases¹⁵⁸

Compare this cycle with the Military Decision Making Process (MDMP) as described in Joint Pub 5-0 “Joint Operations Planning” (Figure 16) and the Joint Air Operation Plan (JOAP) (Figure 10) in Joint Pub 3-30 “Command and Control of Joint Air Operations”. Each of these references describes a process that also translates a senior leader’s objectives into tasks that can be delegated and executed. These two models look to prescribe subordinate courses of action (COA) required to meet the superior’s requirements and objectives.

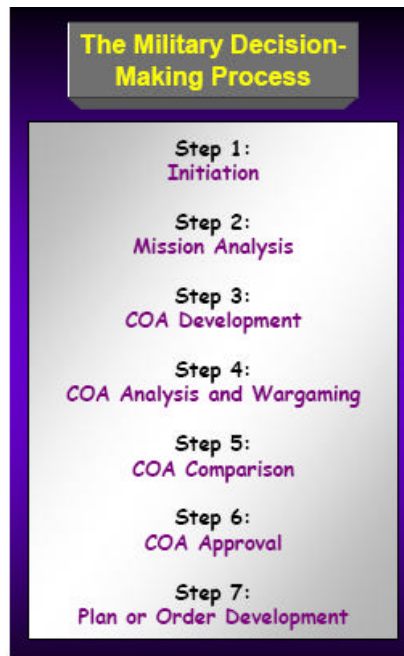


Figure 16 – The Military Decision-making Process¹⁵⁹

If indeed the targeting process does what it declares to do, it puts too much emphasis on discovering geographic targets and listing them in order to gain approval from the JFC. It should be of little surprise to any military historian that recent Joint Forces Commanders like Gen. Clark in Kosovo and General Franks in Afghanistan have centrally controlled the targeting process thus resulting in the perceived micromanagement of targets on the ground. This is exactly what the current written doctrine challenges them to do.

That is not to say the doctrine, as written, is correct. Even in the joint publications, there is a disconnect between what the process wants to do – “translate strategy to task” and what it actually does – produce a JIPTL. An alternate approach would be to assign the organization responsible for the targeting process (the Joint

Targeting Coordination Board – or other JFC designated body in the J-3) the task of assigning required effects to the various components. The process would remain similar; initiated by the commander's intent and objectives, but the J-3 organization, Joint Targeting Coordination Board (JTCCB) would evaluate the COA's from the JFC and generate required effects and/or tasks. These tasks would be assigned to the component with the preponderance of assets to meet the task. Other components would then be considered "supporting" and would assign excess capability to integrate fires.

An example of the way this process might work can be taken from Desert Storm. Assume in the planning General Schwarzkopf required that no Scuds be allowed to impact Israel during military operations. The way current doctrine is written, the JTCCB could come up with a list of all known Scud sites and associated systems and put them on the JIPTL to be struck. Although current doctrine is slightly different than in 1991, this is effectively what happened in Desert Storm. The result was Secretary of Defense Cheney directing sorties against Scuds in the western desert of Iraq.¹⁶⁰ What if instead, the JTCCB evaluated the required effect "no Scuds into Israel" and assigned JFACC the task of interdicting Scuds launched from Western Iraq and protecting Israel from theater ballistic missiles attacks. In these two tasks the JFACC would be the supported commander, possibly calling on the JFLCC or JFSOCC to provide "human sensors", and not only targeting known sites and launchers, but going after establishing a force presence in the area to attack new targets immediately. The JTCCB would then assess the components actions and report to the JFC as to the chosen course of actions ongoing success of failure. Although a complete analysis of this proposal is beyond the scope of this paper,

this structure would restore the initiative and flexibility of decentralized execution that is at the heart of joint doctrine.

Alternative “processes” proposed

The highest inventive genius must be sought not so much amongst those who invent new weapons as among those who devise new fighting organizations – Maj Gen J.F.C. Fuller

The X hour ATO – breaking the Watch the Clock Mentality

The 72 hour structure is broken down into execution phases encompassing 24-hour periods, as we have seen in the historical analysis; there is really no underlying rationale for using 24-hour periods. Professional airmen bristle at the notion of constraining employment of airpower by geography, but zealously defend basing the air component planning and employment on an artificial “Clock”. A question could be asked, “why not put out an ATO every X hours”, where X is any number from 24 to 1. The essence of this question is: What is the best method to plan and execute the air effort? The historical analysis already answered the question of “do we need an ATO;” this question focuses on how to optimize the ATO. Using a deconstructive method, that is, starting at the solution and working backward, it is possible to deduce a method less than the standard 24-hour construct used today.

The end result of the ATO is guidance and tasks to the executors at the unit level. Joint Pub 3-30 defines the Air Tasking Order as “a method used to task and disseminate to components, subordinate units, and command and control agencies projected sorties, capabilities and/or forces to targets and specific missions. It normally provides specific instructions to include call signs, targets, controlling agencies, etc., as well as general instructions”.¹⁶¹ This definition leads us to the question how much time do the subordinate units and command and control agencies need to plan a mission?

The distributed AOC and “Planning Factors”

The Air Operations Center is the focal point of all command and control of Air and Space forces. It has grown from the TACC of Vietnam to the behemoth it is today with its own procurement system and a designation as a “weapons system”. A 2004 study on command and control commented that the AOC is “too large for rapid deployment and flexible employment”¹⁶² and in OIF had approximately 2000 personnel assigned to generate about 1400 sorties per day.¹⁶³ Figure 17 illustrates the current number of people in the AOC necessary to produce sorties on the ATO. A ballpark estimate of control capability would be 1.4 people in the AOC to generate one sortie.

	Operation Iraqi Freedom	Operation Enduring Freedom	Operation Allied Force	Operation Desert Storm
Personnel	1966	720	2467	2458
Approximate Sorties/Day	1380	500	800	2000+
Personnel/Sortie	1.42	1.44	3.08	<1.23

Figure 17 – AOC Personnel vs. Sorties per Day¹⁶⁴

From a deployment point of view, this number of people (to say nothing of the equipment) is certainly problematic. An estimate of required airlift by an AOC to move its personnel and equipment was 37 C-141 equivalent sorties in 1998¹⁶⁵. There have been many articles written about ways to reduce the size of the AOC while not impacting its effectiveness. Major Lee Wight’s School of Advanced Airpower Studies thesis captures the essence of the problem, evaluates some historical and recent initiatives and concludes by providing a few solution alternatives. He uses a concept called “Distributed Air Operations Centers” or DAOCs, which would allow for the delegating of AOC operation

among various locations. This idea is congruent with the “JFACC Operational Concept Document” which attempted to provide a “vision” of the AOC for the year 2010¹⁶⁶. It also recommends shifting the AOC processes from “sequential and hierarchical nature to a distributed, collaborative” process. The document envisioned a “network” of persons at various locations providing the capability the “collocated AOC” gives us today.

An additional option or “branch” of the distributed AOC plan would be to use the Mission Planning Cells (MPC) already resident at each operational base whether forward or in the Continental United States (CONUS). These cells are comprised of operations, intelligence, maintenance, and support planners who currently translate the ATO into executable missions detailing how to accomplish the assigned task in the Order¹⁶⁷.

An option would be for these cells to initially be assigned either sets of targets or a mission task from the MAAP and be allocated specific forces to complete the mission. These forces would not have to be collocated with the MPC. The cell would then create an in depth operational plan to meet the MAAP assigned task while at the same time coordinating with both AOC and other tactical planners from the geographically separated units. If more support assets were needed, the MPC could request the AOC allocate more support (such as Tankers, Suppression of Enemy Air Defense, or Offensive Counter Air assets) Additionally, the in depth planning would allow for the synchronization of various assets and missions. The finished plan could then be published by the MPC into the current ATO using the same system the AOC uses today. The 27th Fighter Wing at Cannon Air Force Base has demonstrated this capability using the “Operations and Tactics Integration Suite” or OTIS during local exercises and Joint Red Flag 2005¹⁶⁸. The Korean theater uses this construct in planning its preplanned

missions for the first few days of a major war with Korea; the MPC creates the missions and AOC then produces the ATO based on the planning. Using this construct, the AOC still retains centralized control via the MAAP, but the planning becomes decentralized and runs simultaneously at the tactical and operational level. In this way, the timeline of the Air Tasking Cycle is shortened. Statistical data shows this entire process, from mission assignment to complete plan can be done in about 4 hours for a 20 -30 ship package attacking an area that will be heavily defended. If the package is smaller, or support required is less, the timeline will be relatively shorter.

Further investigation of this distributed planning construct leads to an idea of assigning numerical “planning factors” to the mission. Two of the most practical factors (though not exclusive) would be: mission importance and support required. The Mission Importance (M-I) factor would describe the priority of the mission in relation to the overall air component strategy¹⁶⁹. An example of this factor would be using a scale of 1 to 4, and analyzing the given mission tasks. Infiltration of a specific special operations unit or a strategic attack mission meant to “decapitate leadership” may be a one (extreme importance) whereas an interdiction sortie against a specific communication center might be a three. Any mission tasked would be of importance, but assigning a weight of importance and listing it on an ATO could serve as a replacement for apportionment and also tie into acceptable levels of risk.

The “support required” S-R factor would define how much integrated planning would need to be done. If the mission is to perform a deep strike into a highly defended area with an integrated air defense, more planning time and assets are required. This factor could be used to assess the “reaction time” by the tactical units, that is how

fast a tactical unit can put together a coherent and integrated effort to meet the task. The example of the deep strike would certainly be a one. A CAS or Kill Box interdiction sortie, where air superiority is at least locally established and targets will not be known prior to take off, might be a four since very little planning or support is required.

During time sensitive targeting, this construct would allow the TST Cell to objectively evaluate a mission based on support required and importance of the task. If a strategic target (i.e. an M-I level 1) was found, and labeled an S-R type 1 the cell would have the ability to ascertain the fleeting nature of the target. Given this information it could decide to put together a package or launch/role aircraft that were capable of operating alone in a type 1 environment such as a stealth aircraft capable of autonomous air to air capabilities (F-22 or F-35). If the same mission was deemed an S-R type 3, a conventional alert aircraft could be launched to accomplish the same mission.

As has been illustrated previously, the current Air Tasking Cycle is sequential in nature, waiting for one step to be accomplished before the next step begins. If instead we use the DAOC concept and move the sequential operations into a collaborative and parallel effort, it would be possible to decrease the size of the AOC, decrease the effect of the temporary or permanent loss of the AOC by enemy action, and increase the efficiency of the Air Tasking Cycle.

In fact, it is completely conceivable that we might put some of our artillery and attack aviation under the control of the CFACC [Coalition Forces Air Component Commander] for a specific task and purpose. For example, we might want to execute a surgical strike that requires the synergy of simultaneous attacks by, say, ATACMS, Army attack aviation and Air Force F-16s. We would put them under one commander for the attack and on the ATO. It doesn't matter who actually owns the munitions or aircraft as long as we whack the bad guys. - William S. Wallace, Lt Gen, USA, Commander, Commander of Vth Corps in Operation Iraqi Freedom¹⁷⁰

The Combined Arms Tasking Order/Totally Integrated Tasking Order

With a clear understanding that the ATO is meant to provide integration and synergy to effects on the battlefield, a legitimate question would be why not have everything listed on the ATO in what should be called a Combined Arms Tasking Order (CATO)? In the quote above, General Wallace succinctly and clearly describes just such a mechanism. Forces in Korea today include some Surface-to-Surface fires and air defense assets in an Integrated Tasking Order (ITO). Although a complete feasibility and requirements analysis is beyond the scope of this limited paper, a CATO would provide a database for locations of forces and the mission, task, purpose and effect they were assigned to achieve.

Say, for example, the JFACC was tasked to interdict and destroy mobile theater ballistic missiles inside a specific joint operating area. In this scenario, he would be designated the supported commander for this particular effort. There would be no reason not to assign ATACMS targets in support of the effort via the CATO and use it as a real time airspace deconfliction tool as well. In much the same manner that the OPTASKLINK is a comprehensive list of all units participating in theater data links, the CATO would be a comprehensive list of units working to achieve the same operational purpose/effect.

The CATO would be used to integrate joint fires. Rather than submit an air support request, required missions and/or targets could be added to the CATO by the designated ground component representative and then sourced by the most effective asset. This asset might be army attack aviation or an F-16 on alert or already airborne. As General Wallace stated, “It doesn’t matter who actually owns the munitions or aircraft as long as we whack the bad guys”¹⁷¹.

This idea may be heresy to some since history has proven Services have been unwilling to give up control of their air assets to create unity of effort. Surely Services will fight tooth and nail to maintain command of their organic assets. Interestingly, current Joint doctrine allows for the inclusion of assets without giving up command over them. Joint Publication 3-30 states:

The inclusion of component air assets on the ATO does not imply any command or tasking authority over them, nor does it restrict component commander’s flexibility to respond to battlespace dynamics.¹⁷²

The same idea and rationale could be used in conjunction with the supported/supporting command relationship based on assigned task or effect. This would make a CATO including all assets in a Joint campaign the complete integration tool to synthesize joint fires in a three dimensional battlespace.

The Next War

Up to this point in the paper, all discussion has focused on problems with the efficiency and flexibility of the ATO process. From past wars to current conflicts, the result is the same. Hard working individuals have overcome the inadequacies of the system to achieve results. Appendix B of this paper offers some suggestions as to how to

improve the ATO process by looking at what the next war would look like if these changes were implemented.

Conclusion

The 72 hour ATO cycle is a relic of the Cold War and fails to capitalize on the flexible employment of air. Investigating warfare involving airpower from World War II to the present, the author answered three questions regarding the Air Tasking Order to prove the process that produces the ATO is in need of change. The answer to the first question “Is the Air Tasking Order a beneficial and value added tool” proved to be a resounding yes. This answer shows that even though the process is inefficient, any revisions should still produce a product like the ATO and could be expanded to integrate all joint fires in a construct such as the CATO.

The second question: “Is the process to create the ATO based on correct assumptions and requirements” was answered after discovering the current doctrine is based on requirements rooted in the doctrine of AirLand battle. Since the primary enemy the U.S. faces does not array itself and fight using Soviet doctrine and current battlefields are non-linear, it is clear the current cycle is not based on correct assumptions and requirement. Desert Storm saw the first operation that deviated from the AirLand battle construct. Rather than recognizing that the needs of the JFC and the ground commander have changed, doctrine continued to try to fit a round peg and in hole that had already changed its shape to a square.

The answer to the final question: “Is the process as efficient as it could/should be?” became clear after an examination of air warfare of the 1990s and into the new

millennium. Desert Storm should have been an unmistakable announcement that the ATO construct had to change since at best it was only 80% successful. The analysis of Kosovo, Afghanistan, and Iraq established that the current cycle continues to become less and less efficient as the battlefield continues to grow less and less linear. It has not kept pace with the doctrinal evolution of the ground Services or with the technological advances in airpower and command and control.

The cycle itself, not airpower employment, lacks the flexibility required by both the JFC and the JFACC in the non-linear battle space of today. Having reached this conclusion, the paper offers some other planning alternatives. Likewise, the author recognizes much more research needs to be accomplished on improving the application of airpower. Therefore, this investigation has set the stage for additional joint experimentation in the near future. Perhaps the most important contribution of this examination is to rejuvenate the debate on this subject. Throughout this effort, the author has become convinced that the ATO process must be updated to create an efficient and responsive command and control system that capitalizes on the natural flexibility of airpower. Clearly, the time has come for thoughtful airpower leaders to update the planning cycle that employs the greatest air capability ever developed.

Appendix A: Air Tasking Order/Frag Examples from History

From: 1700/31/45
To : 1700/1/45
Auth: CO
Init: RHK
Date: 31 March 1945

Headquarters, 310th Bomb Wing (M)
APO 321
1 April 1945

FRAGMENTARY FIELD ORDER)
NUMBER 91)

E X T R A C T

3. c. The 417th Bombardment Group will:

- (1) Conduct strike on LEGASPI Area with four (4) sqdns A-20's as per 310th Bomb Wing. Air Support plan for LEGASPI operations dated 26 March 1945. (91-E-4)
- (2) Maintain twelve (12) A-20's on one (1) hour readiness to support NEGROS operation from 1200/I to 1600/I. Bombload 250# paraGamos. (91-E-16)

AMENDMENT TO FRAG FIELD ORDER NUMBER 91.

1. Following corrections for pre-invasion operations:
417th Bomb Group (L), 18-A-20's, c/s Rebel, TOT 0715
TLT 0730.

BY ORDER OF COLONEL WILSON:

OFFICIAL:
s/ J. A. Helton,
J. A. HELTON,
Capt., Air Corps,
Ass't., A-3

A. J. BECK,
Lt. Col., Air Corps,
Executive.

"A TRUE EXTRACT COPY"
WILLIAM B. CLEVES,
Major, Air Corps.

Note:

673rd Bomb Sqdn (L), LEGASPI, TOT 0715.
675th Bomb Sqdn (L), LEGASPI, TOT 0720.
672nd Bomb Sqdn (L), LEGASPI, TOT 0925.
674th Bomb Sqdn (L), LEGASPI, TOT 0930.
673rd Bomb Sqdn (L), NEGROS, TOT 1400.
674th Bomb Sqdn (L), NEGROS, TOT 1600.

- 2 -

Figure 18 – WWII Air Tasking Order (Frag)

From: 1700/31/45
 To : 1700/1/45
 Auth: CO
 Init: RHK
 Date: 31 March 1945

Headquarters, 310th Bomb Wing (M)
 APO 321
 1 April 1945

FRAGMENTARY FIELD ORDER)
 NUMBER 91)

E X T R A C T

3. c. The 417th Bombardment Group will:

- (1) Conduct strike on LEGASPI Area with four (4) sqdns A-20's as per 310th Bomb Wing. Air Support plan for LEGASPI operations dated 26 March 1945. (91-E-4)
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 Executive.

"A TRUE EXTRACT COPY"

WILLIAM B. CLEVES,
 Major, Air Corps.

Note:

673rd Bomb Sqdn (L), LEGASPI, TOT 0715.
 675th Bomb Sqdn (L), LEGASPI, TOT 0720.
 672nd Bomb Sqdn (L), LEGASPI, TOT 0925.
 674th Bomb Sqdn (L), LEGASPI, TOT 0930.
 673rd Bomb Sqdn (L), NEGROS, TOT 1400.
 674th Bomb Sqdn (L), NEGROS, TOT 1600.

Figure 19 - WWII ATO pg 2

INDEX**HIGHTIDE**

- Tab #1 - Frag Order
- #2 - In Flight Critique
- #3 - Fighter Group Narrative
- #4 - Flight Plan
- #5 - ETA's
- #6 - Inbound & Outbound Refueling
- #7 - Weather Forecast
- #8 - Flight Planning & Cruise Control
- #9 - Engineer's Log
- #10 - Mission Report
- #11 - Navigator's Log

Figure 20 - Korea Air Tasking Order

CG 39 AIR DIV (DEF)

260815Z June 1952

CG 5TH AF
 CG 41 AIR DIV (DEF)
 CG 116 FTR BMR WG (ZEN)
 CG 6101 AB WG
 CG 3D ARS
 CG DET 4 FEAF BOMCOM

OP OP

X

X

X

CG FEAF
 CG FEAF BOMCOM
 CG JADF
 CG 43 AIR DIV (DEF)
 CG FLT B 3D ARS

CITE: OPR-O-330

FOLG IS HIGHTIDE FRAG ORDER IAW 39TH ADIV OPRS PLAN 9-52 (REVISED) CMA MISSION C CMA
 PAHSE II W/B EXECUTED ON 29JUN CURR PD

1 PD A PD DET 4 FEAF BOMCOM W/FURN 6 KB-29 ACFT W/2 AIRBORNE SPARES PD

B PD 116TH FTR BMR WG W/FURN 24 F-84 ACFT W/NEC SPARES AND STAGE OUT OF J-21 IN
 EXECUTION OF MISSION AS OUTLINED CLN

(1) GND ECHELON TO BE AIRLIFTED TO J-21 CMA UTIL TRF CARRIER ACFT W/TAKEOFF AT 271500
 ITEM JUN CURR FR MISAWA AND CHITOSE PD

(2) TACT ACFT AND CREWS W/DEF MISAWA AND CHITOSE 280900 JUN CURR IN 4 WAVES CMA W/30
 MINUTE INTERVAL BETWEEN WAVES CMA LNDG AT J-21 UNLESS OTHERWISE DICTATED BY WEA IN
 WHICH CASE AT THE DISCRETION OF WG COMDR PD

(3) RON OF GND CREWS 27 AND 28 JUN CURR AND OF ALL CONCERNED ON 28 JUN CURR AT J-21 PD

(4) TACT ACFT W/CONDUCT CMET MISSION AND RET TO MISAWA VIA J-21 ON 29 JUN CURR PD

(5) GND CREWS W/DEF J-21 291700 ITEM JUN CURR FOR MISAWA AND CHITOSE PD

C PD 3D ARS W/PROV ROUTE RSQ COVERAGE BETWEEN J-25 AND K-47 FR 291000 ITEM TO 291200
 ITEM AND BETWEEN K-3 AND J-25 FR 291200 ITEM TO 291400 ITEM PD

D PD 6101ST AB WG W/FURN THE SUPPORT OUTLINED IN LTR OPR-O-337 CMA JADF CMA DTD 22 MAY

~~SECRET~~

Figure 21 - Korea ATO pg 2

CURR CMA SUBJ CLN RESULTS OF PROJECT HIGHTIDE MEETING HELD AT KOMAKI AB CMA 15 MAY CURR PD

X PD GEN CLN

A PD MISSION TO BE CONDUCTED ON 29 JUN CURR PD

(1) PTRS W/DEP J-21 29 JUN CURR IN 2 WAVES OF 12 ACFT EA W/40 MINUTE INTERVAL BETWEEN WAVES TO RENDEZVOUS AND RFL (J-25 HOMER 133 DEG 15 MINUTES E - 35 DEG 30 MINUTES N) CMA TO TGT CMA TO RENDEZVOUS AND RFL (K-3 HOMER 129 DEG 22 MINUTES E - 35 DEG 59 MINUTES N) CMA TO J-25 TO J-21 PD

(2) RFLG RENDEZVOUS W/B MADE AT J-25 HOMER AND K-3 HOMER AND W/B THE STANDARD 15 MINUTE LEG ON CRSE RFLG PATTERN UNLESS OTHERWISE DICTATED BY WEA IN WHICH CASE J-14 W/B SUB FOR J-25 AND CONCERNED ORGNS SO NOTIFIED PD

(A) RFLG RENDEZVOUS TIME AT J-25 CLN

1ST WAVE CLN 291000 ITEM JUN CURR PD

2D WAVE CLN 291040 ITEM JUN CURR PD

(B) RFLG CRSE OR THE 15 MINUTE RFLG LEG AT J-25 W/B ON A LINE FR J-25 HOMER TO K-47 127 DEG 45 MINUTE S E - 37 DEG 56 MINUTES N ED THIS CRSE IS SUBJ TO C DUE TO LAST MINUTE TGT C PD IN EVENT A LAST MINUTE C OCCURS CMA IT W/B TRANSMITTED TO JAZZBO LDR BY SYNCOPATE WAVE LDR AT TIME OF RENDEZVOUS PD

(C) RFLG RENDEZVOUS TIME AT K-3 CLN

1ST WAVE CLN 291200 ITEM JUN CURR PD

2ND WAVE CLN 291240 ITEM JUN CURR PD

~~SECRET~~

(2) TKRS CLN

(A) JAZZBO 1 CMA JAZZBO 2 CMA JAZZBO 3 CMA JAZZBO 4 (SPARE) CMA JAZZBO 5 CMA JAZZBO 6
CMA JAZZBO 7 AND JAZZBO 8 (SPARE) PD

(3) GCI CLN ITAZUKE GCI CLN PRONTO W/PRIM 116 PT 10 CMA SECD 134 PT 64 CMA AND
EMERGENCY 121 PT 50 PD

D PD CKS IN AND OUTBOUND W/B MADE W/SHIRLEY PD DENTIST W/B UTILD WHERE FEASIBLE PD
E PD IFF W/B USED BY WAVE LDRS ONLY CMA EXCEPT WHEN SEPARATED CMA IN WHICH CASE EA LDR
W/USE IFF PD

F PD TKR HOMER ON 520 KCS W/CALL SIGN LOVE SUGAR (LS) PD

G PD RAD SECURITY W/B OBSRD BY ALL TASK AND SUB UNITS PD

H PD ALL TIMES W/B ITEM PD TIME HACKS W/B MADE W/THE NEAREST ABCC PD

I PD WEA RECALL CLN DUCK WEA PD

J PD CRITIQUE W/B HELD IN 116TH FTR BMR GP BRIEFING RM AT 1300 HRS THE 2D DAY FOLG THE
MISSION

~~SECURITY INFORMATION~~

VAN E. NEAL, LT COL, USAF, DIR OF O&T
OPR-O/VEN/bdw 2634

VAN E. NEAL, LT COL, USAF
Director of Operations and Training

SECRET

DECLASSIFIED

FM 7AF TACC TAN SON NHUT AB RVN
TO RUSVTO3 TFW BIEN HOA AB RVN
RUSVTOB FLY 5 SOS BIEN HOA AB RVN
BT

SMC

THIS IS THE TACC DAILY FRAG ORDER NUMBER 24012 TO VNAF
USAF JOINT OPERATIONS 456 69C THIS IS THE US SECTION
ALL TIMES ARE IN HOTEL THIS FRAG IS EFFECTIVE FROM
0600H 24 DEC 1968 TO 0600H 25 DEC 1968 EXTRACTS
PERTAINING TO ONLY ONE SQUADRON MAY BE UNCLASSIFIED PROVIDED
TARGET COORDINATES ARE NOT LISTED IN REMARKS SECTION ORDNANCE
CODE AS LISTED IN THE WEEKLY FRAG IF POINTS AS LISTED IN THE WEEKLY
FRAG I IN IP COLUMN REFERS TO REMARKS SECTION FOR IP INFORMATION
OR FURTHER IP INFORMATION TO BE PASSED

MSN	NO	UNIT	C S	A C	ORD	CR	IP	TOIP	REMARKS
DLY5830	3	RAP21	2A37	HBIN	3C L	0720			
DLY5846	3	RRD11	3F100	SERX	4C Z	0730			TO ALPHA
DLY5852	3	BZD51	2F100	SEN	3C L	0740			
DLY5852	3	RRD21	2F100	HBIN	4C M	0830			
DLY5874	3	RRD31	2F100	HEIUN	4C M	1000			
DLY5862	3	DCE51	2F100	HBIN	4C M	1030			
DLY5824	3	RAP71	2A37	HBIN	3C Z	1030			DASSB ROD 3389 0125273
DLY5826	3	RAP81	2A37	NRX	3C Z	1045			DASSB ROD 3389 0125273
DLY5854	3	RAP15	2A37	HBIN	4C M	1130			
DLY5872	3	RAP25	2A37	HB1	4C M	1330			
DLY5856	3	RAP45	2A37	HB01	4C M	1400			
DLY5868	3	DCE81	2F100	HEIUN	4C M	1500			
DLY5858	3	BZD21	2F100	HEIUN	4C M	1700			
DLY5860	3	RAP38	2A37	HBIN	4C M	1730			

MERRY CHRISTMAS AND A HAPPY NEW YEAR FROM YOUR FRIENDLY FRAGGERS
GP4

DECLASSIFIED

2-4930-11

Figure 24 - Vietnam Air Tasking Order

6:48 PM
20 JAN/1600

MASTER ATTACK PLAN
FIFTH 24 HOURS

1/20/91
APPROVED 

TOT	MSNI	REN	TOR	DESCRIPTION	AC
0115	4401A(U)	[DELETED]	A30	H-3 AFLO SW SEAD (RED SEA GROUP)	10 GR-1
0200	3321A		SAD58	1-HAWK NW BAG	1 F-117
	3322A		SAD67	1-HAWK TNG SITE	1 F-117
	3323A		L06	INTERNAL SECURITY HQ	1 F-117
	3324A	[DELETED]	L08	MINISTRY OF DEFENSE	1 F-117
	3325A		L16	PRESIDENTIAL PALACE	1 F-117
	3326A		L15	TAJI PRESIDENTIAL RETREAT	1 F-117
0200			RG03	MEDINAR CP	4 F-16L
TO		[DELETED]	RG04	HAMURARI CP	4 F-16L
0215					
*388TEW					
0216			SG42	3094N 04742E/FROG BATT	4 F-111
TO			SAD06	SCUD C7 BKR - KANMAH	4 F-111
0230			SAD05	314019N 0471434E AL AMARAH IOC 4 GCI SITE	4 F-111
		[DELETED]	SAD25	292345N 0473739E AL JAHRAH IOC/CP	4 F-111
			SC31	292105N 0473830E STO AG SEC OPS CTR AL SALEM	4 F-111
			SC32	291902N 0473752E AL JAHRAH MISSILE FAC	4 F-111
				AL JAHRAH RMQ STOR (SCUD)	4 F-4G
				SEAD	4 F-4G
				SWEET/FORCE PROTECT	8 F-15C
0215	3327A		L04	N TAJI C3 FAC #2	1 F-117
	3331A		L19	INTEL SERVICE HQ	2 F-117
	3332A		C21	ABU GHURAYS BW PT	1 F-117
	3333A		C22	ABU GHURAYS VACCINE PT	2 F-117
	3334A	[DELETED]	CCC28	BAG TELECOM CTR	1 F-117
	3335A		L34C.H	NAT C3 BKR HQ BAGMACH FAC	1 F-117
	3336A		SAD28	AL TAJI IOC	1 F-117
	3337A		C23	TAJI BW FAC	1 F-117
*DUAL DOOR GBU-10					
0215	4411A(U)		A08	AR ROMAYLAH	8 GR-1*
TO	4421A(U)	[DELETED]	A31	SEAD AN MUHAYYAH	8 GR-1
0230				SEAD	2EF-111
*COORD ET-111 W/MSN 0471X					

Figure 25 – Desert Storm Master Attack Plan¹⁷³

MSNDAT/3015C/ZAF/BASSET 15/4F16/INT/-/4C872/-/23015/36435//
 TGTLOC/240015Z/240030Z/-/SUPPLY/301623N0472624E/2M09712//
 REFUEL/GUPPY 07/6307A/MANGO PST HIGH/ALT:200/242330Z/20/TAD07//
 REFUEL/GUPPY 10/6310A/MANGO PST HIGH/ALT:205/242330Z/20/TAD10//
 AMPN/ REMARK IDENTIFIER(S): A E V//
 MSNDAT/3021C/ZAF/ROVER 21/4F16/INT/-/4C872/-/23021/36441//
 TGTLOC/240030Z/240040Z/-/SUPPLY/301623N0472624E/2M09712//
 REFUEL/GUPPY 07/6307A/MANGO PST HIGH/ALT:200/242345Z/20/TAD07//
 REFUEL/GUPPY 10/6310A/MANGO PST HIGH/ALT:205/242345Z/20/TAD10//
 AMPN/ REMARK IDENTIFIER(S): A E V//
 MSNDAT/0501F/EAF/HUSKIE 01/8F16/INT/-/2M842/-/20501/36401//
 TGTLOC/240530Z/240545Z/B1327CANC09/TUNNEL/334822.9N0442714.9E//
 REFUEL/WALLEYE 14/6314B/RAILROAD PRE/ALT:200/240320Z/90/TAD14//
 REFUEL/PIKE 26/6326S/RAILROAD PST/ALT:200/240600Z/56/TAD26//
 AMPN/ REMARK IDENTIFIER(S): A C F P Q//
 NARR/ UNIT REMARKS: 388TFW
 UNIT REMARKS A
 SEE TANKER SPINS FOR AAR INFO.
 UNIT REMARKS C
 CONTACT CENTRAL AWACS. USE CENTRAL COMM PLAN.
 UNIT REMARKS E
 CONTACT EAST AWACS, USE EAST COMM PLAN.
 UNIT REMARKS F
 IF TGT WX PREVENTS EXPENDING ON PRIMARY TGT, PLAN MEDIUM ALT RETU
 ROUTE OVER GUARDS AREA. TGT COORDS WILL BE PASSED FROM ASARS VIA
 AWACS.
 UNIT REMARKS P
 YOU ARE PACKAGE COMMANDER.
 UNIT REMARKS Q
 COORD WITH 0551C, 0555C, 8 (F15, 1 TFW), 0561W (4 F-4G) 0575X
 (2 EF-111), 0573R (2 RF-4).
 UNIT REMARKS V
 IF ACTIVE SAM SITE OBSERVED PRIOR TO ATTACK, ATTACK SAM SITE. DO
 NOT TROLL FOR SAMs. KILL ZONE AF7 NE IF PRIMARY TGT NOT ACQUIRED.
 UNIT REMARKS W
 EXPECT REFUELING AFTER SCRAMBLE IN PAM OR TANGERINE A/R TRACKS.//
 TASKUNIT/801PBW//
 MSNDAT/5210B/ZZF/REAPER 10/3B52G/INT/-/4517L/-/25210/35230//
 TGTLOC/242020Z/242100Z/B1427-CA1216/TROPO/363039N0432525W//
 AMPN/ REMARK IDENTIFIER(S): A B C D E//
 MSNDAT/5213B/ZZF/REAPER 13/3B52G/INT/-/4517L/-/25213/35233//
 TGTLOC/242020Z/242100Z/BC427-01106/PWRSTA/363122N0524523W//
 AMPN/ REMARK IDENTIFIER(S): A B C D E//
 NARR/ UNIT REMARKS: 801PBW
 UNIT REMARKS A
 SEAD, CAP, SWEEP, COMM,SAFE PASSAGE, AND AIR REFUELING MUST BE
 COORDINATED WITH JTF.
 UNIT REMARKS B
 SQUAWKS ARE FOR LEAD AIRCRAFT.
 UNIT REMARKS C
 ADJUSTMENTS TO TOTS, PACKAGE AND MISSION NUMBERS, AND SQUAWKS MAY
 BE MADE PER JTF DIRECTION. CENTAF WILL TRACK YOUR MISSION WITH
 CENTAF ALLOCATED DATA.
 UNIT REMARKS D
 ADVISE 17AD(STRATFOR BOMBER PLANS) ASAP OF ANY DEVIATIONS FROM ATO
 UNIT REMARKS E
 ALTERNATE TARGET IS EW SITE. BE 1340CAC392
 OBJECTIVE-DESTROY/DAMAGE ATENNAS. AND SUPPORT BUILDINGS//
 TASKUNIT/1612 MAS//

Figure 26 – ATO for Desert Storm


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OPER/JRF//
MSGID/ATO/JOINT RED FLAG/ATOOTIS1/-/CHG//
AKNLDG/NO//
TIMEFRAM/FROM:060800ZFEB2006/TO:070759ZFEB2006//
THIS IS AN ATO FOR OPERATIONS CONDUCTED ISO JOINT RED FLAG
HEADING/TASKING//
TSKCNTRY/US//
SVCTASK/F//
TASKUNIT/128ACS/ICAO:KLSV//
AMSNDAT/5473/-/A2A/-/REC/-/-/DEPLOC:KLSV/ARRLOC:KLSV//
AMPN/COORDINATE ORBIT WITH C2ISR PKG CC AND MSN CC//
MSNACFT/1/ACTYP:E8/GHOST01/-/-/25473/35473//
AMSNLOC/070215ZFEB/070530ZFEB/ELGIN LONG/230//
TASKUNIT/160FS/ICAO:KLSV//
AMSNDAT/5444/-/A1A/-/AI/-/-/DEPLOC:KLSV/ARRLOC:KLSV//
AMPN/A//
MSNACFT/4/ACTYP:F16C/BUSTER21/G31P/-/25444/35444//
GTGTLOC/P/-/NET:062110ZFEB/NLT:062135Z/TONOPAH AIRFIELD CHEMICAL STOR
/ID:0363NL7105AC001/UNK/CONCRETE RUNWAY/DMPID:373506.9N1165603.2W
/WGS 1984/4790FT/7105AC001/2D//
REQNO/0//
GTGTLOC/P/-/NET:062110ZFEB/NLT:062135Z/TONOPAH AIRFIELD CHEMICAL STOR
/ID:0363NL7105AC001/UNK/CONCRETE RUNWAY/DMPID:373526.9N1165527.4W
/WGS 1984/4811FT/7105AC002/2D//
REQNO/0//
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/WGS 1984/4847FT/7105AC003/2D//
REQNO/0//
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/ID:0363NL7105AC001/UNK/TANK/DMPID:373512.5N1165502.3W/WGS 1984
/4839FT/7105AC062/2D//
REQNO/0//
AMSNDAT/5444A/-/A2A/-/AI/-/-/DEPLOC:KLSV/ARRLOC:KLSV//
AMPN/A, D//
MSNACFT/4/ACTYP:F16C/BUSTER21/DRY/-/25444/35444//
GTGTLOC/P/-/NET:070325ZFEB/NLT:070345Z/TIRAN CHEMICAL AND BIOLOGICAL
/ID:0363NL7103AE001/UNK/EXPLOSIVE COMPONENT STORAGE BU

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Figure 27 – Current example of ATO ¹⁷⁴

Appendix B: The Next War

Up to this point in the paper all discussion has focused on problems with the efficiency and flexibility of the ATO process. From past wars to current conflicts, the result is the same. Hard working individuals have overcome the inadequacies of the system to achieve results. This paper offered some suggestions as how to improve the ATO process. What then would the next war look like if these changes are implemented?

In order to investigate that question, a scenario must first be created. This conflict takes place in the near future (6 – 9 years) on the continent of Africa. The country, called Erobia, is located in the Darfur region and is a major producer of petroleum and Uranium ore. These two natural resources have created a vast amount of wealth for a few in the country and have linked Erobia to the major stock markets of the world. The majority of the country lives in poverty and a growing epidemic threatens the people's health. The United Nations has reported Erobia is a "seething caldron of pandemic illness, enforced poverty and Islamic fundamentalism".

Within the last two years, Erobia has used its vast wealth to purchase SA-10B surface to air missile systems (SAMs) and SU-30 aircraft to augment its older MIG-21 fleet. Along with the weapons systems, Erobia has contracted professional military members from various former eastern block countries and religious zealots from Pakistan and other Muslim countries to employ the aircraft and SAMs. It is also reported to have biological and chemical weapons. Since it has become the worlds largest supplier of Uranium ore, there is a significant but unsubstantiated threat of a small nuclear capability.

Adjacent to Erobia is Tanzoria, a country of similar size and population without the natural resources of Erobia. Tanzoria has cultural and economic ties to Europe, and was at one time a French colony. Early this year, after a harsh drought, a mysterious virus began in the undernourished peoples of Tanzoria. It has a possibility of becoming a pandemic and spreading to both Europe and the United States, crippling infrastructure and affecting the world economy. A coalition was formed comprised of mostly Western countries to provide containment of the disease inside the region of Africa. Erobia has sealed its border with Tanzoria but there have been at least a dozen fatal cases in the country to date. The international companies providing the infrastructure to harvest the natural resources of Erobia have begun evacuating their non-essential personnel and have requested Non Combatant Evacuation assistance from the State Department should the situation deteriorate.

Due to speculation of an oil shortage, world stock markets have plummeted in the past two weeks and the international business community is lobbying for coalition actions to stabilize the region. Erobian leadership views any NEO as a threat to their ability to maintain their new found wealth and has stated to the United States government any U.S. forces inside the territory of Erobia will be considered hostile.

The European Command (EUCOM) commander has been tasked to lead the coalition and provide assistance and containment of the pandemic while executing evacuations from both Erobia and Tanzoria. Tanzoria is a landlocked country so the preponderance of forces will have to be moved by air. Erobia has coast, but will not allow any U.S. military ships within 50 nautical miles. EUCOM designated a CJTF aligned with functional components. The air component commander is the combined

forces air component commander (CFACC), the land component commander is the CFLCC, Special operations forces fall under the CFSOCC, and naval forces are controlled by the CFMCC. The CFACC tasks are to execute both NEOs with the expectation they will be opposed by enemy air and air defense forces. Additionally, the CFACC will provide humanitarian relief and begin the movement of forces into Tanzoria.

The CFACC uses the concept of the distributed AOC to deploy forces into various locations throughout the theater. He positions himself and his AOC of about 250 people co-located with the CJTF commander inside the Area of Operations. The CJTF operations branch (J3) provides a set of effects assigned to each of the component commanders designating the supported/supporting relationship. The CFACC is listed as the supported commander for the protection of assets during the NEO. The actual effect listed is "Erobian forces will not hamper the effort to evacuate Non-Combatants". For this effort, the CFLCC is providing Apache helicopters and the CFSOCC has provided strategic reconnaissance teams to the CFACC.

The AOC staff has evaluated the CJTF commander's Concept of Operations and Operations Order and come up with a CFACC approved course of action. The choice is a set of initial strikes to disable the Integrated Air Defense before launching the NEO. An initial set of tasks are put forward on the CATO integrating forces from every service and component. The AOC creates the CATO in a collaborative environment with subordinate unit Mission Planning Cells. The targets are listed with associated S-R and M-I planning factors. These first missions are designated 1 – 1 meaning they are critical to the overall success of the operations. The subsequent missions will depend on the

success of the initial strike. If one of the initial missions is not completely successful a new set of targets will have to be struck. These targets are not known at this time but the AOC is using the X hour ATO construct and so is comfortable waiting till the results of the initial strike can be assessed.

The initial strikes are flown as Stealth packages comprised of roughly 200 F-22, B-2, and F-35 aircraft from the U.S. and Britain. They are relatively successful, but the required effects in the north were not completely achieved. Quickly new missions are loaded into the ATO to be struck in the next 4 hours as well as missions to support and execute the NEO. Over the next three weeks the CFLCC forces contain the pandemic, but Erobian forces have begun asymmetric attacks and limited assaults. One evening, the CFLCC receives intelligence of a group of vehicles laded with explosives preparing to attempt a suicide attack on the main U.S. encampment. The CFLCC uses the CATO construct to list the group of vehicles directly on the CATO. The ASOC (or ACCE) designates these missions as a S-R 4 (since the IADS is decimated) and a M-I 1 (since the encampment is at risk). The mission is assumed by one of the alert aircraft flights and the suicide attack is destroyed.

Although a simple mission scenario, this simulation serves to demonstrate some of the capabilities and benefits of the alternatives to the current, though outdated, ATO process. Each of these proposals, from the X hour ATO to the DAOC and S-R/M-I planning factors is a starting point for further joint experimentation.

Notes

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- ³ The use of Strategic is in referenced to meeting the objectives of the Theater Commander. Probably will need a paragraph to discuss/disassociate the use of this term.
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- ⁶ Lt. Col. Phillip K. Heathcock, "The Viability of Centralized Command and Control", *Air University Review*, January – February 1979 Volume XXX, Number 2, 1
- ⁷ Dr. Stephen O. Fought, "The tale of the C/JFACC: A Long and Winding Road", *Air and Space Power Journal*, Winter 2004, Volume XVIII, Number 4, 2
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- ¹⁶ *Ibid*.
- ¹⁷ *Ibid.*, 54
- ¹⁸ *Ibid.*, 60-62
- ¹⁹ *Ibid.*, 62
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- ²² Major General George S. Eckhardt, *Vietnam Studies – Command and Control, 1950 – 1969*, (Washington: Dept of the Army, 199), 3-5
- ²³ Grant Sharp, *Strategy for Defeat: Vietnam in Retrospect*. (San Rapheal, CA: Presidio Press, 1978), XVI
- ²⁴ *Ibid.*, XVII
- ²⁵ Momyer, 90
- ²⁶ *Ibid.*, 90-91
- ²⁷ As referenced from the online historical publication of the U.S. Air Force Museum, accessible at <http://www.wpafb.af.mil/museum/history/vietnam/469th/p6.htm> on 29 Mar 2006
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- ²⁹ J. Taylor Sink, *Rethinking the Air Operations Center*. (Maxwell AFB, AL: Air University Press, 1994), 14
- ³⁰ Warren A. Trest, *Air Force Roles and Missions: A History*. (Washington: Air Force History and Museums Program, 1998), 201
- ³¹ John J. Sbrega, "Southeast Asia", *Case Studies in the Development of Close Air Support*, Benjamin Franklin Cooling, ed. (Washington, DC: Office of Air Force History, 1990), 470
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- ³⁴ *Ibid.*, 278
- ³⁵ McNamara, 121
- ³⁶ Trest, 212

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- ³⁷ General Donn A. Starry. "Extending the Battlefield", *Military Review*, March 1991, 34
- ³⁸ Ibid., 38
- ³⁹ Ibid., 35
- ⁴⁰ Army Field Manual 100-5, *Operations* (Washington: Dept of the Army, 1976), 1-1
- ⁴¹ Dr. Harold R. Winton, "Partnership and Tension: The Army and Air Force between Vietnam and Desert Storm", *Parameters*, Spring 1996
- ⁴² During this period, Strategic Air Command concerned itself with the targeting of Soviet strategic center's of gravity by using Nuclear weapons. The targeting of other than fielded ground forces was done by Intercontinental ballistic missiles and bombers.
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- ⁴⁶ Sink, 25
- ⁴⁷ CINC was the term used at the time of Desert Storm, since then DOD policy forbids the use of this term.
- ⁴⁸ The Goldwater-Nichols Act had a wide reaching effect. This statement is not meant to trivialize the Joint aspects of the act, nor to negate the importance of the Chairman of the Joint Chief adversarial role to the President.
- ⁴⁹ JCS Pub 26, *Joint Doctrine for Theater Counter Air Operations*, The Joint Chiefs of Staff, 1 April 1986, III-4.
- ⁵⁰ USCINCENT OPlan 1002-90, Outline Plan, HQ, US Central Command, 16 Apr 1990 23-25
- ⁵¹ Ibid, 23
- ⁵² Eliot A. Cohen, *Gulf War airpower Survey Volume 1*, (Washington, 1993), 367
- ⁵³ The MAGTF was authorized IAW JCS Pub 26 to keep its organic air for direct support, but directed all interdiction, Air Defense, and reconnaissance sorties to the JFACC.
- ⁵⁴ Cohen, 51
- ⁵⁵ Ibid.
- ⁵⁶ Ibid., 54.
- ⁵⁷ Gen. Ronald R. Fogleman, "airpower and the American Way of War" (speech presented at the Air Force Association Air Warfare Symposium, Orlando, Fla., Feb. 15, 1996)
- ⁵⁸ James A. Winnefeld and Dana J. Johnson, *Joint Air Operations-Pursuit of Unity in Command and Control 1942-1991*. (Annapolis, Md: Naval Institute Press, 1993), 97.
- ⁵⁹ Strategic is used in the sense that these targets are separate from the Ground Scheme of Maneuver and focused on the Theater-Strategic Objectives IAW Joint Publication 3-0.
- ⁶⁰ Winnefeld, 97
- ⁶¹ Lt Gen Buster Glosson, *War with Iraq, Critical Lessons*, (Charlotte, NC: Glosson Family Foundation, 2003), 15
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- ⁶⁴ Edward C. Mann III, *Thunder and Lighting: Desert Storm and the airpower Debates*, (Maxwell AFB, AL: Air University Press, 1995), 29
- ⁶⁵ Glosson, 75
- ⁶⁶ There was an intelligence division of labor that mirrored the operational division for planning and executions. The enemy situation correlation division (ENSCD) was in charge of "Today's" War and the Combat Intelligence Division (CID) was in charge of the planning side.
- ⁶⁷ Cohen, 132
- ⁶⁸ Ibid., 133
- ⁶⁹ USCENTAF Regulation 55-45, 27 Jun 1990
- ⁷⁰ Eliot A. Cohen, *Gulf War airpower Survey Summary*, (Washington, 1993), 237
- ⁷¹ Cohen, Vol 1, 72
- ⁷² Ibid., 9
- ⁷³ Ibid., 191
- ⁷⁴ Ibid., 198
- ⁷⁵ Ibid., 193

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- ⁷⁶ Ibid., 164. The planning staff consisted of approximately 30 people including two Navy commanders, an Army Lt. Col., a USMC Major, and an RAF Wing Commander.
- ⁷⁷ Glosson, 155
- ⁷⁸ Cohen, 200
- ⁷⁹ Joint Pub 3-56.1, *Command and Control for Joint Air Operations*. 14 November 1994. 4-5
- ⁸⁰ McNamara, 131
- ⁸¹ Glosson, 155
- ⁸² Cohen, 222
- ⁸³ Gregory A. Roman, *The Command and Control Dilemma*, (Maxwell AFB, AL: Air University Press, 1997), 25
- ⁸⁴ Glosson, 251
- ⁸⁵ Based on authors experience in fighter aviation
- ⁸⁶ William Mitchell, Brig Gen, *Winged Defense: The Development and Possibilities of Modern airpower Economic and Military*, (New York: Dover Publications, 1988), 217.
- ⁸⁷ Benjamin S. Lameth, *NATO's Air War for Kosovo: A strategic and Operational Assessment*, (Santa Monica, Ca: RAND Corp, 2001), V
- ⁸⁸ William J. Clinton, "Transcript of Clinton Remarks in Address to the Nation", White House Press Office. March 24, 1999
- ⁸⁹ Nardulli, Bruce, *Disjointed War: Military Operations in Kosovo*, (Santa Monica, Ca: RAND Corp, 2002), 25
- ⁹⁰ Ibid., 26
- ⁹¹ John E. Peters, *European Contributions to Operation Allied Force*, (Santa Monica, Ca: RAND Corp., 2001), 16
- ⁹² Lameth, 22
- ⁹³ Peters, 25-26. The GAO Report "Kosovo Air Operations" commented that 64% of the targets required higher than the Commanding General approval and at the end of the operation over 150 targets were still awaiting higher level approval.
- ⁹⁴ Lameth, 201
- ⁹⁵ Ibid., 120
- ⁹⁶ Ibid., 122
- ⁹⁷ Nardulli, 34
- ⁹⁸ Ibid., 71
- ⁹⁹ John J. Jumper, "An Eaker Colloquy on Aerospace Strategy, Requirements, and Forces", (presented at a speech at the Ronald Reagan International Trade Center, Washington, D.C August 16, 1999)
- ¹⁰⁰ Tommy Franks, *The American Soldier*, (New York: Harper Collins books, 2004), 277
- ¹⁰¹ Franks, 270. In a speech to the Joint Session of Congress, President Bush called for the Taliban to hand over all terrorist in its country and cease and desist from supporting any more terrorism. Unless these demands were met, both the Taliban and al Qaeda would be "destroyed". George W. Bush, 20 Sep 2001, "Address to a Joint session of congress and the American People" available at www.whitehouse.gov.
- ¹⁰² Franks, 264
- ¹⁰³ Ibid.
- ¹⁰⁴ Ibid.
- ¹⁰⁵ Ibid.
- ¹⁰⁶ Ibid., 270-271
- ¹⁰⁷ Michael W. Kometer, *Command in Air War: Centralized vs. Decentralized Control of Combat airpower*, (Cambridge, Ma: Massachusetts Institute of Technology, 2005), 126.
- ¹⁰⁸ Franks, 258
- ¹⁰⁹ Kometer, 126
- ¹¹⁰ Lambeth, 86
- ¹¹¹ Kometer, 154
- ¹¹² Task Force Enduring Look, *Quick Look 10 – Time Sensitive Targeting*, (Washington: U.S. Air Force Office of Lessons Learned, January 2003), Classified Secret, Excerpts are unclassified.
- ¹¹³ Lambeth, 212
- ¹¹⁴ Kometer, 152
- ¹¹⁵ Lambeth, 261 and 213.

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- ¹¹⁷ Ibid., 3
- ¹¹⁸ Ibid.
- ¹¹⁹ Walter E. Buchanan III, Lt Gen, USAF. *Operation Iraqi Freedom – Major Combat Operations. USCENTAF Lessons Learned*. (South Carolina: CENTAF, 2 Sep 05). Classified Secret, Excerpts are unclassified. 1-2
- ¹²⁰ Moseley, 8. 1800 is an average of the 41,404 sorties flown in the 28 days
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- ¹²² Kometer, 182
- ¹²³ Moseley, 5
- ¹²⁴ Ibid., 12
- ¹²⁵ Ibid., 9
- ¹²⁶ Ibid.
- ¹²⁷ Kometer, 183
- ¹²⁸ Moseley, 2
- ¹²⁹ Buchanan, 1-5
- ¹³⁰ Joint Publication 3-30, *Command and Control for Joint Air Operations*, 5 June 2003, III-2
- ¹³¹ Warfare Studies Institute, *Joint Air Estimate Planning Handbook*, second ed. (Maxwell AFB, AL: College of Aerospace Doctrine, Research, and Education, 2003)
- ¹³² JP 3-30, Chapter III
- ¹³³ JP 3-30 highlights that these phases will be synchronized with the Joint Forces Commanders plan.
- ¹³⁴ Ibid., III-2
- ¹³⁵ Ibid., C-1
- ¹³⁶ Ibid., III-23
- ¹³⁷ Ibid., C-3
- ¹³⁸ Ibid., C-3
- ¹³⁹ Ibid., III-24
- ¹⁴⁰ Ibid., C-3
- ¹⁴¹ Ibid., III-21
- ¹⁴² Ibid., GL-4
- ¹⁴³ Ibid., GL-5
- ¹⁴⁴ JP 3-0, XI
- ¹⁴⁵ Major Mark G. Davis, “Centralized Control/Decentralized Execution in the Era of Forward Reach”, *Joint Forces Quarterly*, Issue 35, 96
- ¹⁴⁶ Davis, 97
- ¹⁴⁷ Ibid.
- ¹⁴⁸ Roman, 12
- ¹⁴⁹ The use of the phrase Senior Commander is meant in relation to the Operational level of war
- ¹⁵⁰ General Henry H. Shelton, USA. *Concept for Future Joint Operations: Expanding Joint Vision 2010*, (Washington: GPO, 1997)
- ¹⁵¹ Woody W. Parramore, “Defining Decentralized Execution in Order to Recognize Centralized Execution,” *airpower Journal*, Fall 2004, 24-26. Woody W. Parramore is responsible for developing doctrine at the Air Force Doctrine Center. Using the Air University Library Bibliography for “Centralized Control of Air Assets” March 2005 accessed on 20 Feb 06 there were 11 different citations which argued for the AOC to centrally execute some portion of an air operation and the air force historical research database listed 23 papers that proposed some type of centralized execution.
- ¹⁵² Kometer, 184
- ¹⁵³ Buchanan, 9
- ¹⁵⁴ Ibid., 5
- ¹⁵⁵ Joint Publication 1-02, DOD Dictionary of Military and Associated Terms, 12 April 2001. 423
- ¹⁵⁶ Joint Publication 3-60, Joint Doctrine for Targeting, 17 January 2002, V

¹⁵⁷ JP3-60, II-2

¹⁵⁸ Ibid.

¹⁵⁹ JP 5-0, III-7

¹⁶⁰ Glosson, 174

¹⁶¹ JP 3-30, GL-3

¹⁶² David A. Brumbaugh, *The Parallel Air Tasking Order: Reducing the Size of the Air Operations Center*, (as presented to the 2004 Command and Control Research and Technology Symposium), (Chantilly, Va: Science Applications International Corp. (SAIC)), 1

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¹⁶⁴ Brumbaugh, Table 1

¹⁶⁵ Major Lee T. Wight, *The Theory, Practice, and Future of the split Air Operations Center*, (Maxwell AFB, AL: Air University, 1998), 7

¹⁶⁶ Ibid., 113

¹⁶⁷ Authors personal knowledge

¹⁶⁸ Author was the Chief of Weapons for the 27 FW during this time. The Operations and Tactics Integration Suite was developed by the Author, but is not the only solution. The point is that there exists off the shelf capability in order to make this proposal happen and it does not require large amounts of funding or development.

¹⁶⁹ The term Strategy here is in keeping with the JAOC idea of an overarching plan and the Strategy to Task cycle. It is not intended to denote the level of warfare

¹⁷⁰ Kometer, 137

¹⁷¹ Ibid., 137

¹⁷² JP 3-30, VIII

¹⁷³ Cohen, Figure

¹⁷⁴ This ATO is taken from an exercise called Joint Red Flag, but uses the same format and contains the same information one would find in an ATO from Operations Enduring Freedom and Iraqi Freedom. At the time of publication, neither Operation's ATOs had been declassified.

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About the Author

Major Robert P. Winkler is an F-16 pilot with experience and assignments in Kunsan AB, Korea, Incirlik AB, Turkey, Shaw AFB, SC, Cannon AFB, NM, Operations in Southwest Asia and Homeland Defense. Prior to attending Joint Advanced Warfighting School, Major Winkler spent the majority of his career as an Instructor and F-16 Weapons Officer at the Squadron and Wing level. Additionally, he has worked as a liaison officer in Air Operations Centers at Osan AB, Korea, Incirlik AB, Turkey and Prince Sultan AB, KSA and has two years of experience as a flight line maintenance officer. His professional military education includes Joint Advanced Warfighting School, Air Command and Staff College and Squadron Officers School. In September 2006, Major Winkler was assigned to the 31st Fighter Wing at Aviano AB, Italy.